



COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

**HOUSE OF
REPRESENTATIVES**

STANDING COMMITTEE ON SCIENCE AND INNOVATION

Reference: Business commitment to research and development in Australia

TUESDAY, 29 OCTOBER 2002

SYDNEY

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**HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON SCIENCE AND INNOVATION**

Tuesday, 29 October 2002

Members: Mr Nairn (*Chair*), Ms Corcoran, Mr Evans, Mr Forrest, Ms Grierson, Mr Hatton, Mr Lindsay, Mr Tony Smith, Mr Ticehurst and Dr Washer

Members in attendance: Ms Grierson, Mr Lindsay, Mr Nairn and Mr Tony Smith

Terms of reference for the inquiry:

To inquire into and report on:

The international comparisons indicate that while the public sector in Australia supports R&D at an impressive level, business investment is less impressive.

With particular consideration of:

the R&D drivers in small and medium sized business;

the needs of fast-growing companies; and

the considerations by which major international corporations site R&D investment,

the committee seeks to address three questions.

What would be the economic benefit for Australia from a greater private sector investment in R&D?;

What are the impediments to business investment in R&D?; and

What steps need to be taken to better demonstrate to business the benefits of higher private sector investment in R&D?

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Committee met at 9.04 a.m.**CARR, Dr Stuart William, Director Radiopharmaceuticals, Australian Nuclear Science and Technology Organisation****GOODWIN, Dr Miriam Winifred, Science Policy Analyst, Australian Nuclear Science and Technology Organisation****MUIR, Mr Robert, Director, Business Development, Australian Nuclear Science and Technology Organisation**

CHAIR—I declare open this public hearing of the inquiry by the House of Representatives Standing Committee on Science and Innovation into the commitment by business to research and development spending in Australia, and welcome the representatives from the Australian Nuclear Science and Technology Organisation. Do you have any comments to make on the capacity in which you appear?

Dr Carr—This week I am acting executive director.

CHAIR—I would like to point out to you that, while this committee does not swear in witnesses, the proceedings here today are legal proceedings of the parliament and warrant the same respect as proceedings in the House. Deliberately misleading the committee may be regarded as contempt of the parliament. The committee prefers all evidence to be given in public, but should you at any stage wish to give evidence in private you may ask to do so and the committee will give consideration to your request. Would you like to make a statement before we move to questions?

Dr Goodwin—Yes. We will each be contributing to an opening statement. I will be starting, followed by Rob Muir and Stuart Carr. I would just like to give a brief introduction to ANSTO and its interests in this inquiry. We are very delighted to be here. ANSTO is a public research organisation which is part of the department portfolio of the Department of Education, Science and Training. We are Australia's national nuclear organisation and the centre of nuclear expertise in Australia. We have a range of nuclear facilities such as a research reactor, accelerators and a national medical cyclotron that particularly comes within Dr Carr's area. Our interests in this committee are not only the research we conduct as part of our business enterprises, particularly in the radiopharmaceuticals area, but also the ability to attract funding for research from business, the collaborative work we do with business, the business use of our facilities—such as the use by the mining industry of the research reactor to irradiate minerals—and the business take-up of the outcomes of our research. It is an area of great importance in the commercialisation of research that business itself has the capacity to take up that research. Business awareness of the potential research that we can conduct, as well as business awareness of the research that they can conduct with us and the facilities we offer, is very important to us. The research we conduct is both strategic research, with a very long-term view, and tactical research that is directed at specific issues that the organisation faces. In our submission we have set out some of the areas in which we believe business commitment to R&D in Australia could be increased and improved, and we would obviously like to see this committee achieve some great results for the nation. I will hand over to Rob Muir.

Mr Muir—Thank you very much. I would like to use my opening statement to respond to one of the questions posed by the committee under the terms of inquiry; that is, what are the

impediments to business investment in R&D? It is a key issue that was brought home to me during my tenure as investment commissioner in the US. My background is that I am returning to Australia after having spent 20 years in the US in tech commercialisation from research institutes and venture capital. While there is no shortage of innovation in Australia, there is very much, whether you are talking about the US or Australia, a chasm which is called 'a valley of death', which is there when moving the technology from the laboratory to the board room. This chasm is really created by two main things. One is a lack of early stage investment and the second is what I would call a business talent pool. The business talent pool will take some time to respond to because it is associated with a longer term experience factor and Australia is very new to this game.

Speaking now of the investment gap, this is obviously compounded in more difficult economic times, such as these, when bankers, debt-financing venture capitalists—who really do equity financing—and corporations move up the value chain. They cause a further gap and they further reduce funds available to nascent and early stage ventures. In the US and the UK—and I stress this is based on 30 years of experience so I am not suggesting a quick fix—this has often been provided for the investment gap by angel investors. There are certain investment taxation incentives in the US which I think Australia should look at, although very often best practice in the US does not translate easily to Australia. In fact, I will refer the committee to section 1045 of the IRS tax code, which talks about tax-free rollover investments where, if you invest in what is called a qualified small business stock—and that has limitations so you do not have accounting firms or investment companies, which we are familiar with—and you exit the investment and you roll over the game within 60 days to another investment, then it is a tax-free transaction, so to speak. Another one is section 1244, which talks about losses. If an investment results in a loss—and most of these early stage ventures are very high risk—that can also then be deducted against ordinary income. It is very much aimed at trying to foster investment in this part of the value chain. A similar system exists in the UK. It is called the UK Enterprise Investment Scheme.

My suggestion to the committee to address these issues is first of all to look for additional reforms in tax code beyond the VCLP, which I have been involved in, to encourage more angel investment of this type. Secondly, there is an allied risk associated with it—even under a governance issue—which is the liability of some directors if they are operating an emerging business. There is a certain amount of risk that you might expect with investors coming after you. In the US, there is the whole concept of an accredited investor. Australia does not have that. I believe that the governance provisions for small businesses—early stage ventures—should be looked at.

Dr Carr—My name is Stuart Carr. I am Director Radiopharmaceuticals, as Miriam indicated at the start. My background is that before joining ANSTO I worked in multinationals in Europe and in Australia so I have seen that side of things. I guess, as Miriam Goodwin indicated, ANSTO is a multifaceted organisation, providing advice to government through to straight commercial activity. One of the activities that I manage is the radiopharmaceuticals side, which is actually a business unit of ANSTO and a for profit entity within ANSTO. We supply radioisotopes for medical and industrial use throughout Australia, New Zealand and the Asia-Pacific and more recently as part of a strategic partnership with SIRTEx Medical, a small Australian biotech company that is listed on the Australian stock market, we have started supplying, under an agreement with them, our radioisotope products into the US. Now that they

have CE Mark for the European Union, we expect to be supplying those same products into Europe very soon.

We in our own activities market and sell our products but we are supporting other companies who want to work in the nuclear or radioisotope field to develop their businesses. We also support R&D in the biotechnology and the drug discovery industry. We have under way about 11 clinical trials basically with hospital based nuclear medicine departments and other people who are more academically oriented. Finally, we have our own development program, where we are trying to develop a couple of novel globally competitive radiopharmaceuticals which we will expect to bring into the Australian market to benefit the Australian people but also to out license to an international audience. I guess the committee has a very challenging task because every country I have been to or worked in has the same sort of issues to what we are talking about here.

CHAIR—So we are not unique?

Dr Carr—No, we are not unique. When I lived in the United Kingdom everybody talked about the innovation gap there and the lack of exploitation of ideas and the British being good at science but not good at innovation. This was 10 years ago. I welcome this inquiry and we hope that it actually makes a difference.

CHAIR—Thank you for that. In your submission you talk about the decline in students going into science, engineering and technology areas, and that is something that has been raised by numerous people during this inquiry as an impediment to research and development. What is ANSTO's experiences with attracting good people in the science areas? Have you any suggestions or advice for government in that area?

Dr Goodwin—We certainly are on the record as having concern about the quality of people. It is not only an issue, though, for us attracting people into ANSTO; it is also an issue for the people with these skills going into our supplier organisations and the organisations that use the research that we produce. I would not be able to comment in particular on accurate broad spectrum perspectives of ANSTO's experience in hiring—where those numbers are these days—suffice to say that yes we have concerns about the number of people with those skills across a broad range of fields.

Dr Carr—I think that there are two issues. One concerns the particular nuclear skills. We are the only nuclear organisation in Australia and there is no nuclear education in universities. Typically, when we want specialist skills we have to bring them in from overseas, usually from Europe and North America. That is becoming more challenging particularly with the exchange rate. It is pretty hard to offer a competitive salary in Australian dollars even compared with the pound these days because people naturally multiply by three.

I would like to echo what Miriam said. The quality is good but we generally have a concern about the number of people undertaking science and engineering degrees. This is purely anecdotal but there are things that the government can do in terms of the market forces. For example, the HECS fees for doing a science degree are significantly higher than for a lot of liberal arts type degrees. Maybe the government could actually use market forces to encourage people and make it more economic for students to do more science and engineering degrees. It is a well-known statistic that in 10 years time there is going to be a significant shortage of

scientists and engineers in the world—demographics demonstrate that. Technology will continue to be important in having a sophisticated and developed society.

CHAIR—Do you think that HECS fees are such a big barrier? Don't you think the problem starts a lot earlier in the education process?

Dr Carr—I think it does. My son is in primary school and I find that his teachers' level of scientific understanding over the years has been very limited. I think that appreciation and understanding of science needs to start at year 1 and year 2 of primary school.

CHAIR—With respect to nuclear science, is there a barrier there because the thought of anything nuclear is seen as being this dreadful thing because it relates to power and nuclear waste and things like that.

Dr Carr—I can only speak from the experience of recruiting. Personally, I recruit into radiopharmaceuticals probably about 10 to 15 people a year or sometimes a few more than that. I can only speak personally from my experience—maybe the people are self-selecting who apply—but we generally find that people find it really exciting. It is all about doing good for society and doing beneficial things. The people we interview are pretty excited about the prospect.

Mr ANTHONY SMITH—I would like to draw you out on a couple of points that you make in your submission and that have come out in some of the earlier hearings. There are two points in particular: the fact that large sections of the business community and the community in general still see R&D as a cost rather than an investment and the cultural point, if you like, concerning the decisions in board rooms about R&D expenditure. From where you stand, how has that changed over recent years? Is it improving or is there a concrete barrier that needs to be tackled rather strongly? The other point, which I thought was a good point, was the role that industry associations could play with regard to that business culture. We hear a lot from industry associations about what they want from government but what about the proactive role that they can play as genuine representatives of the business community?

Mr Muir—I can share with you the US experience if you think it is relevant. It is very clear that there has been less interest in corporations funding R&D. A prime example of that has been Du Pont, where they had a large experimental station. They have shut down a large part of that because it was found to be uneconomic. It got to the heart of where innovation really comes from and it normally comes from individuals not from corporations. The corporations core business, of course, was the return to shareholders and it focused on specific industry segments. It has been easier for corporations in fact to license or acquire technology particularly in the IT sector. You have seen that with Cisco and Radiata in Australia and probably with some of the pharmaceutical companies in their working alliances with some of our biotech companies.

Having said that, the mainstream of industries are in that camp but the very innovative companies like 3M, Canon and Matsushita—in other words, typically global corporations; those that are filing the greatest number of patents—seem to have the greatest business growth, so it very much comes back to a corporate philosophy on where you are going to spend your money. But you are quite right that it is very difficult for Australia to compete in this area. I think there are two things that ANSTO can do. First of all, we have to get on the radar screen in terms of global science and technology. There are limited pockets in which Australia is very competitive

and we can certainly make a case, and I think the advent of the new reactor at ANSTO is a great example of that. We have imported some experts from the US and we are developing some key instruments and technology which, over the next five years, will give Australia a chance to raise its game.

The second issue, which relates to Dr Carr's point about some of the education issues, is creating alternative career paths for people. It is very difficult and time consuming to have a science career because it may span seven to 10 years by the time you finish your postdoc, and the younger generation these days are particularly interested in the quick buck, shall we say. But now people are talking about 'b to c'—'back to consulting'—because the quick buck is no longer there and people are trying to focus. At ANSTO we are trying to come up with a holistic approach to working with our scientists. But, just as you have a scientific model in the case of a scientist, you also have a business model, so our idea is to try to import some US best practice and form those partnerships between science, business and industry and transfer it out. I have only been on board for about four weeks but, if we could talk to you next year, hopefully we would have something to report.

Dr Carr—I think the point about industry associations is very important. We belong to several industry associations—Medicines Australia, for example. In my view its Action Agenda, of which you are aware, has really shifted the game from just arguing about whether PBS is funded well enough to thinking about what is required to take the industry to the next stage. That was a big transition for that organisation. We also belong to the Australia Industrial Research Group, and we had the pleasure of seeing Gary Nairn at breakfast in Canberra a couple of months ago. A lot of the annual meetings focus on helping R&D managers add to their toolbox of ways to both focus their R&D effort and work with their management to deal with this issue of R&D being more of an investment than a cost. A lot of case studies and tools are presented to the participants in those meetings that they can use in their own organisations.

Mr ANTHONY SMITH—You raised the point about education generically and talked about a shortage of scientists, but I think you talked at the start about the difficult transition being from the lab to the boardroom, or whatever that analogy was. Do you think that universities could do something structurally rather than concentrating on how many people go into a particular course and what it cost, which the US experience really does not bear out? As someone who did a commerce degree a long time ago, it just occurred to me when you said that that you would meet students doing science in the first week and might not see them again for three years. Do you think there is anything that the campuses could do to blend things a bit? I know you can combine degrees—it is quite common to combine law and commerce, for instance, and you get piles of commercial lawyers out of it—but that is probably one area where there is a critical gap.

Mr Muir—Exactly. It gets back to career path, but a related issue is the US experience that the skills set is out of date in most industries within seven years and in IT within about 18 months. What does that mean? Most US corporations are heavily into continuous retraining of staff. The American experience has been that that should be on the shop floor. There is a segment of the education community over there called community colleges whose faculty will often go to the shop floor and work directly with somebody to train them on a particular machine or in a particular business process. I am not familiar with that type of organisation here. I know you have TAFEs but I am not sure whether it directly translates. The role of the university in the US has typically been more in fundamental science, and you have more applied

science in the research institutes here. I am not really answering your question directly; I am just trying to share some experiences. I think the common factor is how Australian industry trains its workers on the shop floor in the latest techniques. Universities have a role in that, but I believe other institutions have as well.

Dr Goodwin—There are actually pockets—I hope they are more than pockets—where this is taking place. I, for example, did my doctorate with the Australian Innovation Centre in the Faculty of Engineering at the University of Sydney. That faculty had students who were undertaking commerce subjects and, particularly later in their studies, were picking up subjects around organisational change and innovation within the organisational process. Those students were very enthusiastic about what they were doing. They were going out there into industry having matured in their engineering studies and added this element to that and there was great demand and great enthusiasm. Certainly it is out there and it is being well received.

Mr ANTHONY SMITH—That is a positive story. Did those students find their way there or is it something that the university had encouraged, and created a pathway?

Dr Goodwin—There was a pathway for it.

Dr Carr—The concept of lifelong learning, which is what my colleague has been alluding to, is a very important one—the concept that you do not just go to university and pass your exams and not study again. We need continual renewal in everybody's career, and broadening of skills. Some of the universities are very flexible now. For example, the University of Technology in Sydney has more part-time than full-time students and a significant proportion of them are mature age. Maybe that is a model—where you have a core of first-time graduates and then universities provide continuous learning for people on a part-time or an industry funded basis, depending on whether they want to do it for self-motivation or whether it is supported by their employers. ANSTO supports a significant number of students—people who work for us and study part time. We are very proactive on that sort of thing, because we want to grow our people. We invest a significant amount of money in training and development of our people in a whole range of skills, not just technical skills.

Mr Muir—US institutions actually foster public-private sector partnerships. In particular, UC Connect in San Diego, which is part of the University of California system, holds internal and external briefings with industry to try to capture that knowledge. Texas does it with an organisation called IC². There are a number of organisations trying to interface in the way you are talking about. But clearly—if I could leave you with one message—it is a public-private sector partnership. The private sector has a vested interest in actually having appropriate talent to run its businesses, and government therefore benefits from the tax base of the jobs that are created and the profits made.

Mr LINDSAY—Guys, I am going to ask you a question which you might think is a bit prickly. But, before I do, I just want to say to you that I am a great friend of ANSTO, and I was part of a government committee that enthusiastically recommended that we spend, I think, \$286 million on a replacement reactor for HIFAR. So I am a friend! When I read your information, I saw that one of the things you said was that ANSTO has a staff of approximately 850 people. I started to think along the lines of: 'Golly, 850 people to run something no bigger than a washing machine.' This is simplistic, but this is how I started to think: 'What about efficiency in R&D? Why does it need 850 people to do a lot of research and innovation and so on?' Again, that is

terribly simplistic, but it introduces a subject that I do not think the committee has dealt with before, which is efficiency in this sector of the economy. Do not justify 850 people, but would you offer the committee some advice on where you see inefficiencies in the system and how things could be done better?

Dr Carr—R&D efficiency is a very important topic. Both in my career in multinationals and recently in ANSTO, it has been a very important topic because, whether you regard R&D as a cost or an investment, your investors want to get the best value for their money. When I worked in Europe, the company I worked for went through a process of looking at the whole R&D portfolio—and they called it the portfolio because they regarded it as an investment—and homing in on which R&D they should be doing and which they should not be doing. For example, their portfolio consisted of several thousand projects, research activities, when they started the process and, by the time they had finished the process, it was honed to something over a thousand projects that were critical to the business. When I joined the multinational in Australia, we went through the same sort of process. At ANSTO we have a similar sort of process. Every activity we undertake is reviewed both internally and externally for what its value proposition is: whether it will deliver value to the Australian community, to our customers and to the international community. Like everybody, we are very conscious that, in most of the organisation, we are spending the taxpayers' dollar and they expect to get a return on their investment just like anybody else. So it is a very important issue. ANSTO, as Australia's only nuclear organisation, have to cover all the bases. We are very concerned about research productivity. It is something we spend a lot of energy on to make sure that our projects and the work we do are delivering the best value.

Mr LINDSAY—How do you handle in your committee system—whatever it is—whether there is a prospect of getting an outcome at the end of your research?

Dr Carr—No project will be funded unless it has well-defined outputs and outcomes.

Mr LINDSAY—But, talking more generally, out in the community sometimes things start from somebody having a bright idea, and there is no track record as to whether the bright idea will ever work. How do you handle that?

Dr Carr—You need a balanced portfolio. You need a mixture of projects that have more defined goals and those that are more speculative. But even if you are starting with a bright idea, you need to have some idea about how it is going to be used or who is going to use it, because that helps you to focus the project. If you have a great idea and nobody is ever going to find any use for it or you cannot think of anybody who is likely to use it, sometimes it is hard to assess the value of that.

Dr Goodwin—To add to that point, from the moment somebody has the bright idea and they talk about it with their peers, their peers are in a good position to assess the potential value of that. That is the first stage of the weeding process. It goes through a number of stages to the point where it will achieve funding, and then there will be milestone reporting to ensure that it is staying on track. There is quite a rigorous system to ensure that projects stay on track. They evolve because, as we know, it is the nature of R&D that you start out with one goal but there will be things that spill over within that and, if the project evolves and continues to deliver value, that is well and good.

Dr Carr—To deal with your particular question, you can scope an idea: you spend a bit of money to get more substantive information behind an idea. I know that the government is going through a research priorities exercise. I guess that that is about researching efficiency in a way.

Mr Muir—One of the reasons I was hired was to try to address the issue that you are talking about. We are in the process at this particular point of putting in a business process methodology, and it is really based on an advocacy group process which talks about some of the elements that we have already heard about. It is obvious that there has to be a principal scientist or a researcher who has the idea. You obviously need management like Dr Carr, for example, whose division supports some of these developments, and you need a business element. So a team is assembled. Step one is IP review, as something that is protectable, is strategic to the core business and also applies to a business arrangement. Then you need research librarians. The next step on the path is snapshot market research. Is this a global market or is it strategic to Australia's interests? You do customer surveys that interface with the private sector. This is wound out into a business case analysis, where you start asking questions like: if we did form a business or if we did an R&D type project, what would be some of the outcomes that we are talking about and how much money would be involved? That leads to a financial analysis—would the investment, whether it is in a project or a commercial venture, justify the amount of money that is going to go in? Lastly, the outcome for us would be two pages, which is really a business opportunity document which would then have to be tested. We would test it by what we are going to call a 'technology forum'. We would bring peer to peer science together to validate the science. We would involve some private sector individuals, whether they are in law, marketing or business, to validate the business assumptions, with the goal being at that particular point that, if we went out looking for a partner, a commercialisation or some sort of tech transfer, the project has, in the vernacular, legs. That is very much the system that ANSTO is going to put in place.

Mr LINDSAY—Could you give the committee the benefit of your view on this: in what we are talking about, starting with the encouragement of people to have bright ideas, through to the bright idea, through to the process that we have just talked about, through to the commercialisation and ultimate delivery to the market, where do you think that this committee ought to spend more time in fleshing out where Australia can leap forward much more quickly in that process? Where are the roadblocks?

Mr Muir—I thought that you were going to ask me where the roadblocks are for the scientist, and I was going to say that there has to be some incentive for the scientist if you wanted—

Dr Carr—We need to think of a system approach. There are a couple of good reports. The Wills report was very good on the biotechnology area, where it talked about industry, universities and innovative culture all working together to be successful. There was a very good presentation by one of Clinton's advisers on the biotechnology sector. I cannot remember his name, but he said that three things you need are a good research base, good innovation and tax incentives and a good hospital system. You cannot talk about science and innovation without talking about tax, education and business. I am not going to give you a simple answer. It is not an easy question. It is a whole of system and a whole of country approach.

Mr LINDSAY—I have been hogging the time, and you get fined if you ask too many questions on this committee. I will quickly run through a couple more questions. You talked in your submission about the investment gap.

Mr Muir—Yes.

Mr LINDSAY—Yesterday we had evidence about the fact that, unless you have substantive real estate, the banks, for example, do not want to know you to underwrite whatever. Should the government underwrite loan applications? Can you see a mechanism whereby the government could put up the collateral? Has that been done anywhere else in the world?

Mr Muir—Yes, it has. There is a microloan project under the US Small Business Administration. If you are a small business and you are looking to really commercialise a technology or form a business which is obviously going to create jobs then you can have grants up to \$25,000 in tranche one. The numbers may have changed because the legislation keeps changing.

Mr ANTHONY SMITH—Are they grants or are they loans?

Mr Muir—Excuse me, these are microcapped loans through an approved lender. The banks are qualified ahead of time. But it is the same issue that you have alluded to in terms of the security you put up. In that case once you put the banking community back in, first and foremost they are not investors, they are lenders, and they have to protect the investment. A lot of the time I think the banks do not understand that. There is a trend now to the use of IP as bank surety against loans.

Mr LINDSAY—And the bankers are going—

Mr Muir—Not necessarily the bankers but some of the financing groups. The question is: how do you actually value a piece of IP? The trend now is to use a Black-Scholes portfolio risk model to come up with an idea. This really gets back to saying: what is a benchmark? Does it look like a cable TV model? Does it look like a PC model in some way? And you use a very high-risk net present value factor on it to calculate the value. Some people will lend you money against those types of things. It is happening but it is a very small part of the market.

Mr LINDSAY—So your advice is that the committee ought to consider a recommendation to government to have a look at the government stepping in where someone cannot provide collateral.

Mr Muir—I think so. If I can digress slightly and try to bring it back if I can, the major difference in my view—and I am not speaking on behalf of ANSTO; let the record show that—is who is going to fund innovation in different countries. If you look at the US model, where private industry has 60 per cent of all private equity in the world, there exists a significant pool of money for these types of early stage ventures. You can contrast this with Australia where we have very few what I would call angel investors—my last research showed five people who are recycling their talent and money. I do think the Australian situation is different; I do think we need to have some sort of structure. I would suggest that the committee probably needs to do some further research and maybe look at a place like Holland. Holland has a system, again anecdotal and not knowing what the legislation is, whereby early stage ventures are given grants

and if the venture is successful then it is a convertible note, if you want, where the grant has to be paid back. If the venture is unsuccessful, which is most of the time, then it is considered to have been a grant. The message being, 'We're glad you tried. You learn from your mistakes. Let's move on and try it again.'

Mr ANTHONY SMITH—How would you compare that to the scheme in the US? Australia has spent 95 years getting out of the banking system. The Holland system of grants at face value seems to dovetail into a lot of the business assistance programs. I do not think the government could meet the demand of the banking thing, could they?

Mr Muir—I do not know what the statistics are, Mr Smith, with regard to Australia. I am just trying to share our experiences. Obviously there is a difference in population and in fact there is a difference in the people willing to do that. In fact, even with the American system, the Republican Party tends to expect that business will take care of itself and the Democratic Party is more into actual community involvement in providing those sorts of grants. There definitely needs to be some checks and balances because I know in Australia from limited experience that there has been some abuse of the system with some of the R&D grants. People will always be creative to see if they can take some advantage. That is a good thing about Australia—we are creative.

CHAIR—That is not the sort of innovation that we want. You mentioned the microcap. They are loans from the banks but are they underwritten by government?

Mr Muir—They are. There is an appropriation to the SBA and there is a certain amount of money allocated. Once that money is used up then you have to have another allocation, so to speak.

CHAIR—The loans are low interest rate or normal interest rate?

Mr Muir—Low to normal interest rate. You do not get a special break, so to speak.

CHAIR—The difference being that they do not have to put up property as security; the security comes from government?

Mr Muir—They may. It again depends on whether you are back negotiating with the banks. Normally, one of the requirements of the banks—and it is the same in Australia—is a personal guarantee. So there is some exposure to the individual.

CHAIR—On the subject of the difference between, say, America and Australia from a banking point of view: we tend to get anecdotal evidence that our banks in Australia do not look beyond the bricks and mortar guarantee and that if you do not have that then forget it. The inference is that elsewhere that is not quite the case, that the banking industry in the States is a bit freer, I suppose, in valuing business and maybe IP as security. Is that the case or is it not as stark as some people think?

Mr Muir—I could not comment on the Australian situation, having just come back.

CHAIR—In Australia, if you do not have property then forget it.

Mr Muir—I will rely on your experience. The US situation is that, yes, it has been well demonstrated. In fact, there have been major success stories of industries being formed on the basis of technology. I think I made a statement in a private conversation we had that we have always had good tech. Our issue has been that we have not formed any serious businesses out of it. But the fates are favourable now, because Australia is in a global economy. One other thing to add is that there are many community development programs in different parts of the United States where you can have industrial revenue bonds, and they sometimes extend to helping commercial technology as well. They are driven by state initiatives and sometimes by city initiatives. But you are looking at a much larger population base than in Australia.

Mr LINDSAY—In your opening statement you also talked about the question of considering the liability of directors for early stage enterprises. Is that working in the United States at the moment?

Mr Muir—Yes, but again—and as was mentioned at the Australian Venture Capital Association conference here in May—you are looking at 30 years of history. The defence in the US is very much a Delaware case whereby it is very carefully laid out that, if you follow this prescription, you will be shown to have acted diligently and therefore not open yourself up to some sort of suit. At the moment we do not really have sufficient case law in Australia, in my view, and it is quite difficult to prove that you acted diligently.

Mr LINDSAY—Should the government then put something down in the law?

Mr Muir—I believe so. If the mission of the government is to try to stimulate job creation from early stage technology based ventures then that is what the government can do. And, addressing Dr Carr's question, it can create infrastructure which includes the legal and, let us say, the financial systems to make it attractive for industry and the public sector to get involved.

Mr LINDSAY—The worry always is that, if you make these laws, somebody will use them for their own improper purposes. Does that happen in the US?

Mr Muir—Of course. It is the old story of greed. The fact is that, regardless of whether it is the Australian government or the US government, there will always be somebody who will try to rot the system. But you have to look for the greater good. If you operate on the 80-20 rule, you may be able to drive some Australian businesses forward. We live in a developed economy. In fact, if you look at Ireland and Singapore, where there were some early wins with putting in some low-paying jobs in some of the fabs and in some of the telemarketing, they have now reached the stage where their economies have developed just like Australia's. We are competing with those people now, so we need to move forward and develop our technology businesses. Those businesses develop higher paying jobs, and that is what Australia's future generations need.

Mr LINDSAY—You just need to put up your sandbag for a second.

Mr Muir—I am sorry; I am on my Australian hobbyhorse.

Mr LINDSAY—Australia has research entities such as the Australian Institute of Marine Science, DSTO, CSIRO and ANSTO. Should government policy be directed towards getting even closer linkages between those organisations and the higher education sector in the

country? Should we be directing organisations such as yours to get certain outcomes in relation to relationships with the higher education sector?

Dr Goodwin—At the moment, it is in all of those organisations' interests to maximise those relationships. Because we are focused on the productivity of our research and on the value we can gain from our research, we seek those opportunities as much as we can and as is appropriate.

Mr LINDSAY—You are not uncomfortable about anything like that?

Dr Carr—I would like to add something. I know most about ANSTO and I know something about AIMS. They have very particular focuses, so they complement the expertise that is available in the higher education sector and they are reservoirs of knowledge and capability. As Miriam Goodwin said, we work a lot with other research agencies where appropriate, where our skills complement those in the other institutes, to further national goals.

Mr LINDSAY—The subset of what I talked about with the higher education sector was collaboration between the government agencies themselves. Does it frighten you to think that things might move closer?

Dr Carr—We do that extensively already where it is appropriate. It is a matter of appropriateness. Where our core capability and another organisation's core capability are put together and the sum becomes greater than the parts, that is where there is value in cooperation between those institutes.

Dr Goodwin—I might mention the Australian Institute of Nuclear Science and Engineering as a model for such cooperation. This has been operating for decades. It has as its members ANSTO and 37 universities and it provides a vehicle for those universities to gain access to our facilities and to work with our people. So there are firm models of collaboration. And of course I know the committee has taken an interest in the CRC structure. That again is a model for such collaboration.

Mr LINDSAY—If I were an SME, would it be awesome to even think that I could do business with ANSTO or would it be easy to do business with ANSTO?

Dr Carr—ANSTO is very easy to do business with.

Ms GRIERSON—In your funding model, what proportion comes from government?

Dr Carr—About 70 per cent.

Ms GRIERSON—Is the other 30 per cent generated by being good to work with?

Dr Carr—A significant amount of that is generated by the sale of radioisotopes for medical and industrial use. The rest is generated by research and consultancy services to industry.

Ms GRIERSON—How do you measure your success? What sorts of indicators do you use for your success? Is it the number of patents or the IP you take out? Is it what you value add to

other people's research and enterprises? How do you measure your success so that we can look at the worth of our money?

Dr Carr—I think it depends on who the customer is. It is basically all of those things. If we undertake straight commercial activity, it is the way you would measure the success of a commercial entity. If it is supporting industry, it is about the value adding that that delivers. If we are providing support to the government, it is about the impact that has on the particular department we are dealing with. It is all of those things. In the straight research area, it is about publications, patents, being invited to participate in influential fora—all those sorts of things.

Ms GRIERSON—You recommend in your submission that perhaps government should use best-case examples to promote the ability. Would you have a best-case example that you would use to show the value of research commercialised?

Dr Carr—We could probably give you several examples.

Ms GRIERSON—Good; I am sure you can. We will not take them this time. I have one other point. As an aside, you said you thought someone was going to ask you about giving incentives to scientists. We really have not had much in terms of incentives to scientists, except the problem of education and training and the problem of portability for scientists. Are there other incentives that scientists need to stay here and to do good ventures in research?

Dr Goodwin—I would say it is not just about financial incentives, but also about the incentives to do good work at good facilities. That is a key motivating factor for many scientists.

Mr Muir—Adding to what Dr Goodwin said, scientists are clearly driven by peer scientific recognition. But at the end of the day that turns out to be more of a psychic income, so there has to be some financial income at some point. In fact, we are considering again importing a US style incentive program which will be based not just on individual science but on team science, where you recognise that you have to have not only a science component but also a business component.

CHAIR—You talk about clusters and clustering in your submission and the fact that there are some impediments to the awareness of the benefits of clusters. What experiences can you give us in that respect? Can anything be done to encourage more clustering? This point, particularly with regard to helping small to medium businesses get involved in R&D, is coming up more and more in the evidence that we are getting.

Dr Carr—I think clusters are a valuable activity but you have to be a bit careful that you do not get too many. For example, there is the North Sydney biohub and there is the Westmead biohub and there is the southern Sydney biohub, so you can end up with too many of these things.

CHAIR—This was raised yesterday.

Dr Carr—It has to be something that adds value and is not just a fashion that we all get together on. There has to be some synergy between all the people participating in it for it to deliver something. I think clusters are basically a good thing. We talked about cooperation

between SMEs and various different organisations: clusters are almost like ways of actually getting all those people in a room together to at least communicate with each other. They are a good starting point but you have to be careful that they do not end up being too fragmented and, as well, too exclusive and not inclusive.

Mr Muir—The US experience was very much in the early nineties when there was the demise of much industry, particularly in California. An initiative called the Second Gold Rush was created. In fact, five clusters were created: one of them, for example, was actually called Siliwood—a combination of Hollywood and IT—and there was biotech down in San Diego et cetera. The idea behind them involved an incubator structure where you needed to have a critical mass of people. In fact, in the newer industries where lifestyle is a key determinant of having people come together, you have to have multidisciplines, so clusters tend to respond to that. Hopefully, Australia will be able to develop those clusters, because you will find that foreign investors will tend to gravitate to a cluster because it is a way of leveraging their investment.

CHAIR—Thank you very much for your submission and your evidence this morning.

[10.05 a.m.]

FAHEY, Dr Kevin, Senior Scientific Adviser, Pfizer Pty Ltd

KETELBEY, Dr Bill, Senior Medical Director, Pfizer Pty Ltd

LATHAM, Mr John, Finance Director, Pfizer Pty Ltd

CHAIR—Welcome. Is there anything else you want to say about the capacity in which you appear here today?

Mr Latham—I have been with Pfizer for six years in Australia. Before that I was with Bristol-Myers Squibb in a number of capacities overseas and before that with Price Waterhouse finance.

Dr Fahey—I had 15 years with CSIRO before going overseas to join Smith Kline Beecham and then to Pfizer in Connecticut. I came back through the PIIP scheme and am very thankful for the PIIP scheme.

CHAIR—I point out that, while this committee does not swear in witnesses, the proceedings here today are legal proceedings of the parliament and warrant the same respect as proceedings of the House. The deliberate misleading of the committee may be regarded as a contempt of the parliament. The committee prefers that all evidence be given in public but should you at any stage wish to give evidence in private, if there is any confidential information you would like to provide the committee for its benefit but would not want to see on the public record, you may ask to do so and the committee will give consideration to your request. Would you like to make an opening statement before we proceed to questions?

Dr Ketelbey—I would like to make a few brief comments before we answer your questions. Pfizer is very appreciative of this opportunity to appear before the committee in this inquiry. In the broader debate regarding the R&D commitment of Australian companies, some pessimism exists about whether Australia can attract significant investment by highly research intensive industries. Pfizer provided a submission to the committee because it does not share this pessimism in relation to the pharmaceutical industry. Human therapeutics is perhaps the most research intensive of all industries, with arguably the greatest benefit for society when that research is rewarded with success. Australia can and should participate in the growing effort to discover new medical treatments which have such profound social benefits.

In recognition of this, there has been a strong focus by governments in Australia to develop and support the biotechnology industry. However, successful investment in Australian biomedical ideas will ultimately require the capital and knowledge of the global pharmaceutical industry as the main discoverer, developer and supplier of human use biotechnology products. Already the pharmaceutical industry invests approximately \$300 million per annum in Australian medical research, and that contrasts with around \$25 million from venture capital funds. This commitment by the industry has grown rapidly under the factor F scheme and the Pharmaceutical Industry Investment Program, PIIP. Since the start of factor F, Pfizer's

commitment to R&D has grown from essentially zero to around \$25 million in the year ending 30 June 2002.

In our view, Australia has the opportunity to attract significantly greater investment in pharmaceutical R&D, resulting in major benefits to the economy, our domestic research base and the quality of Australian health care. However, to achieve this, Australia will require a policy environment that facilitates this continued growth. Low prices paid for pharmaceuticals by the federal government under the Pharmaceutical Benefits Scheme have obvious benefits for public health care expenditure in Australia. A side effect of this policy, however, is that investment in R&D by the industry is significantly restrained, with a consequent loss of economic growth and revenue. The federal government may wish to consider improved prices and drug access as part of a wider package for this industry which delivers such concrete fiscal returns.

It is also Pfizer's view that an expanded and carefully targeted PIIP scheme beyond 2004 has the potential to build a significant pharmaceutical R&D presence in Australia. Each dollar provided by the government under the present scheme results in around \$7 in additional expenditure on R&D and manufacturing by eligible companies. The recommendations of the Pharmaceutical Industry Action Agenda, in Pfizer's view, offer some valuable proposals to gain additional R&D investment in the scheme. In addition, a commitment by governments to attract significant investment—for example, through tax concessions—will assist local offices of companies like Pfizer to build a strong case for R&D investment in Australia. KPMG is currently finalising a report for Medicines Australia which compares the policies used successfully by Singapore to attract investment from the pharmaceutical industry with those of Australia. Pfizer will be pleased to provide this document to the committee on its completion.

In conclusion, Pfizer believes that the pharmaceutical industry offers an excellent example of how the appropriate policy settings can capture a significant proportion of R&D now being conducted overseas. Australia's competitive advantage in biomedical research and a continued growth of the industry worldwide make it possible and highly desirable that Australia increases its share of global investment in pharmaceutical research and development.

CHAIR—Can you explain to the committee how your company makes its decisions about where R&D is conducted? In doing that, you might explain where in the world you are conducting R&D and what percentage is done here compared with other parts of the world.

Dr Ketelbey—Bits of that question probably relate to all of us. I will start with my comments. Clearly, research and development investment decisions within the corporation are made at a high level and broadly based geographically. With the opening up of Eastern Europe, Latin America and many of the Asian countries to research in recent years, there is a lot of competition for that research dollar. It is very much dependent on the local environment, the local capabilities and the local track record of research that leads to a decision being made as to whether research is placed in one country or another. This reflects, of late, the success that Australia has achieved in the last 10 years in attracting R&D—because of its significant track record. Research is done globally. Clearly, the US and Europe are the major foci of research, but there is no doubt that the capabilities and the depth of scientific capacity in Australia are well recognised now, and our head office is certainly looking to invest more in the region.

CHAIR—What would be the biggest plus that you, arguing on Australia's behalf, would use to have some work done here, and what would be the biggest negative?

Dr Ketelbey—Currently, the biggest plus would be our track record.

CHAIR—So the quality of our research—

Dr Ketelbey—It is the quality of our research, our capabilities, what we have achieved in the last 10 years and what we have shown we are able to achieve. The biggest negative, to my mind, would be the history of the poor investment environment in Australia. This is a hangover from many years ago—many senior executives still view Australia as a particularly poor investment area and a particularly poor business environment in which to invest. It is improving, but there is clearly a lot of history that we have to overcome. I will now ask my colleagues to comment.

Dr Fahey—There is no doubt that Australian medical research is well-respected worldwide. We have always boxed in a much higher weight division than our actual numbers would indicate. At the level of the science, I think there is a great respect for Australia. Certainly through the PIIP scheme, which I was intimately involved in, Pfizer were actually able to raise Australian science on the radar screen of the core researchers in Groton, Connecticut and in Sandwich in the United Kingdom. So instead of ringing up somebody they went to college with at MIT and doing a collaboration there, they actually consider doing collaborations across the Pacific.

Going back to Bill's comment, within Pfizer there are micro decision makers and macro decision makers. Bill was talking about the macro decision makers. The scientists in Pfizer are well-respected for being able to identify the sort of research that you need to do in order to meet the portfolio demands of the Pfizer research organisation. Once we get a scientist in Pfizer excited about collaborating in Australia, we have stepped over the first barrier. From there on, we can really get a lot of good communication going through at about the director type level. When you start to get up higher and make the macro decisions about where Pfizer will strategically start to place large sums of money, then you get into these economic sort of arguments. Unfortunately, there is a residue of that within the company.

CHAIR—I asked earlier about where you do the research. How much do you do here, percentage wise? Between 1999 and 2004 I think you have dedicated about \$90 million to R&D in Australia. How does that compare with what goes on elsewhere?

Mr Latham—For the year ended June 2002, we spent about 5 per cent. It is about \$25 million. When you go back and have a look at what we have been doing pre-PIIP and post-PIIP, we started off at about \$7 million a year. In 2000, that went to nearly \$10 million; in 2001, up to \$11 million; and then last year, \$25 million. A lot of that was due to collaborations and work that Kevin Fahey was doing to get these collaborations on board. They do not happen overnight—there is a lot screening and contract negotiations and things like that. It is a very positive thing to see those dollars being spent.

Dr Fahey—We have probably submitted about 150 proposals to Pfizer to get about 30 up and funded. We do have our own hit rate as well.

CHAIR—But there has been almost a four times increase in the space of three or four years.

Mr Latham—That is right. We were able to do that because PIIP was something positive that we were able to take to head office. We work for a multinational corporation but we are Australians, and Australians manage Pfizer within Australia. We like to see investment come to Australia, whether it is in the way of manufacturing for exports or whether it is in the way of research and development. The thing that really gets to us, as Bill was saying before, is that there is a track record where not just Pfizer but I think most of the multinational corporations have been through a period where they either were not able to get drugs reimbursed or, once reimbursed, they were given 20 per cent price reductions—or, in our case, 50 per cent price reductions. That sort of thing is very hard for our head office to accept when it happens unannounced. That sort of thing is now in the past, I believe.

We still have difficulties—the PBS process is a very exhaustive one on cost-effectiveness—but once you get a drug proven to be cost-effective then you have the process that that price will be the highest price you are ever going to get. As years go by, that price will go down. We are fighting in that environment. With PIIP and the good news that that gave us, we were able to go to New York and say, ‘This is something of great benefit.’ That was well received. In fact, we were able to get the No. 2 in research in Pfizer to come to Australia—actually get him down here—because of PIIP. He was really impressed with the institutions he saw and the people he met. If it had not been for PIIP, he would not have come. You cannot understate the importance of that ammunition to bring that investment here.

CHAIR—Is the tyranny of distance still a problem?

Dr Ketelbey—No, it is not a problem. I think it was a perceived excuse—it was used as an excuse—but, really, distance is not a problem. In fact, it may even be a benefit for us, because we have the real ability to become a centre of excellence within the Asian region and even for the African region. As an example I would use the new biometrics facility that we have just been able to attract to Australia—I must say, against very competitive bids that were put up by India, Singapore, Taiwan and Thailand. We were able to attract this biometrics centre to Australia that covers the Africa, Asia and Middle East region, so now we have become a centre of excellence for that region. The same could happen with manufacturing and with clinical research. There are many technologies that we could become the centre of excellence for in the region, capitalising on our geographic position.

Dr Fahey—We very actively manage the collaborations that we have in place in Australia and we build into the budget the opportunity for Australian researchers to visit Groton or Sandwich at least once a year. So Australian researchers do visit the Pfizer home bases and they meet face to face with the scientists that they are collaborating with. Conversely, we have been able to attract a lot of those scientists to come down to Australia and they go around on a speaking tour that we put together for them. Just as importantly as that, most of the projects are run on a monthly teleconference where the poor old Americans have to stay up late at night and the Australians have to get up early in the morning. It is amazing, once they get into the rhythm of this, how effective it is, because they start to hear the commercial imperative coming down the telephone line from Pfizer: ‘Have you done this? Have you done that?’ That is also an education for them. So we actually do put into the budgets an opportunity for the Aussies to go over to Groton and to Sandwich and vice versa and it has been very beneficial.

Mr LINDSAY—Just before I lead into a question about prices of drugs on the PBS, which is a bit of a message that you have for the committee, I have a question about the part of your evidence where you talked about the government's monopoly purchasing power. Is there a flip side to that? Is there a seller's monopoly pricing power, because you are the only person a drug can be bought from?

Dr Ketelbey—No, because what we are finding is that the negotiations in dealing with the PBS get drawn out. The downside to it is that in the process of trying to reach an agreed price the people that are impacted upon are the patients. Pharmaceuticals are being registered competitively with the rest of the world—they are available in the US and Europe at about the same time as they are available in Australia—but access to those pharmaceuticals under the PBS scheme is drawn out for a much longer time than it is in Europe and the UK. No, we do not have a monopoly seller position, because ultimately the PBS process is an evidence based pricing process. Without the evidence, the data or the ability to justify the value of the product, we are not given the price. We have a number of examples where we have not been able to launch products on the PBS in Australia because of this inability to agree an appropriate price.

Mr LINDSAY—So then consumers in Australia do not have access to that drug, whatever it might be.

Dr Ketelbey—That will be the ultimate end point. They may not have access to the drug or they may not have adequate access to the drug, and certainly that has happened in a number of situations with our products.

Mr LINDSAY—Does your company understand the government's difficulty with the unsustainability in growth of the cost of the PBS?

Dr Ketelbey—I think it is important for us to put on the record that we absolutely support the PBS. Pfizer does not have a problem with the PBS and we certainly do sympathise with the problem that the government has with the PBS. But I think it is important for a good balance to be achieved between what the government's PBS budget can afford versus the necessity to attract, encourage and enhance an appropriate pharmaceutical industry within Australia.

Mr LINDSAY—From my perspective, the pharmaceutical industry in Australia is highly regarded by the government. You have got yourself in a very good position.

Mr Latham—There sometimes is a myth that the industry is against the PBS, that we want to dismantle the PBS, and that is not correct.

Mr LINDSAY—You talked about improving PBS prices to get an R&D benefit in the country. Have you got any advice for the committee about some quantitative outcomes that might occur—that if this happened to the price then you would get this much more research? Or is that too difficult to answer?

Dr Ketelbey—I could not be as exact as that. What I would say is that in an environment that is perceived as a negative investment environment by the decision makers overseas there is always the hesitancy to invest in R&D. In an environment where we are achieving between 50 and 80 per cent of OECD prices and perhaps less than 50 per cent of US prices, as evidenced by the Productivity Commission, there is always going to be a hesitancy on the part of investment

decision makers to readily invest in long-term research initiatives because there is not that sense of long-term security related to access to products and growth in our business in Australia.

Mr LINDSAY—You talked about the need for tax incentives to be available. Another pharmaceutical company gave us evidence that they effectively got no tax incentive because their IP was held offshore. Is that what you do? Do you have that difficulty?

Mr Latham—That's right. All of the IP related to Pfizer products, as you would understand, is held in the US. In order to get the tax concession in Australia for investment in R&D, the IP has to reside in Australia. There is a different definition for tax to get the deduction versus PIIP. Under PIIP there is no restriction on where the IP is held. That is where you can see that the driver for investment in R&D these last four years has really been PIIP, and they didn't say the IP has to reside in Australia.

CHAIR—That is why there was PIIP—because the pharmaceutical companies could not access the tax concession effectively.

Mr Latham—That's right. The tax concession is good but there is a bigger picture, there is a broader picture, with trying to get investment—and not just in R&D but to get the manufacture of base material plants. As you know, we import most of the active ingredients that we use. We export \$2.3 billion worth; we export more than the wine industry. But we import to the value of \$4.7 billion. So the \$4.7 billion that we import is in the active ingredients. Those active ingredients are made in the US, they are made in Ireland and coming online soon will be Singapore. That is the intellectual property there, where they actually have the processes to do that. That is the investment that we are losing. To try to get that so we can build the base materials here would then give us the ability to turn that around so that then we become an exporter to other locations around the world rather than an importer. They talk about funding the PBS. If you could switch that around, you would be able to very quickly fix the problem with the PBS.

Mr LINDSAY—Towards the end of your evidence you talked about a program that was attracted to Australia when there was heavy competition from Singapore, Thailand and whatever. Why did we win?

Dr Ketelbey—Just to clarify, this was the biometric centre. We won in the end because of our intellectual capabilities in the country, because of the PIIP scheme, as it is now, and because of our track record. We clearly showed what we could do, that we had the quality of people here and that there was the PIIP benefit for attracting this very specialised area of research to Australia. On pure financial grounds, when costs were compared, no, we were not competitive. But when everything was put into the mix that is why we won, plus the fact that we very aggressively went out to bid for this research unit. We put a lot of resources behind showing, and trying to sell, the real benefit to our head office.

Mr LINDSAY—Do you think Australia beats its drum well enough in relation to the quality of our people when we are talking overseas?

Dr Ketelbey—I think we do, but what we need is more opportunity to do that, and that opportunity comes from an environment where we are able to go out and sell what Australia has to attract that research and to attract that manufacturing capacity to Australia. In the five or six

years that I have been at Pfizer, it has been one of my particular goals to go out and sell our capabilities to the head office, and it has been successful. But if we are going to achieve a further quantum leap in investment in this country, we are going to need to offer more than just what we are capable of doing—what our people capacity is. We have now been able to show the head office what we are capable of. Now we need something further: an environmental change, perhaps a tax change—something to show them that there is a long-term commitment to attracting a broad based pharmaceutical industry to the country.

Mr LINDSAY—Thank you for that.

Dr Fahey—If I may add a comment there, when I was working in Pfizer in Groton I was quite surprised and delighted by the number of government commissions we had coming through. We had senators and House of Representative members who were coming through and looking at Pfizer and talking to Pfizer about the pharmaceutical industry. Obviously, on occasions like that, you had the CEO, Bill Steere, there as well. It was a very interesting relationship between government and industry. I think it is at that level that we now need your help. We can talk about the science very effectively and we have got a lot of runs on the board, but we do need to help US and UK based pharmaceutical companies look at Australia a little bit more supportively, I guess. The Australian government is doing a lot, and we carry that message forward, but if we could get a little bit of help conveying that message at a higher level, it would not go astray.

CHAIR—So you would recommend that this committee go over to America!

Dr Fahey—If you would like an invitation, I could certainly have one on the table this afternoon!

Mr ANTHONY SMITH—Picking up on where you left off, you have had international experience and you are in an industry where R&D is critical. That stands you apart from some of the other sectors of the economy. You mentioned in your submission, particularly with regard to the US, that there is a good relationship between the scientific community and industry over there. Could you comment on whether that has improved in Australia in recent years and, more particularly, on what could be done by the business community. You have mentioned that there is an important role for government, but there is a role for the business community as well. What things underpin that culture in the United States—perhaps at an industry association level or in the boardroom? What are the sorts of things that we can be looking to the business community to do?

Dr Fahey—I might start off at a lower level and go back to the PIIP scheme again. There were two sides to that, really. One was obviously elevating Australia on the radar screen of Pfizer and getting these collaborations started. The other nice thing about it was that the scientists in Australia who started collaborating with Pfizer started to learn about the commercial imperatives—things like how you truly protect intellectual property. Not all intellectual property has the same value: some bits have to be protected very carefully, while others we are not so fussy about et cetera.

Pfizer have a number of different schemes. One I would like to highlight is a thing called summer internships, where Pfizer actually take in postgraduate students over the American summer. We pay them a small salary and give them accommodation, food and the like. I did

meet an Aussie over there—an Australian got into that scheme, but he had to pay his own airfare. I thought, ‘Gee, if we could just have more Australian postdocs able to participate.’ I know other companies like Glaxo and, I am sure, Merck all have these summer internships.

Mr ANTHONY SMITH—Do you do them here?

Dr Fahey—We do not have an industry in which to pop them.

Mr ANTHONY SMITH—The scale is not there.

Dr Fahey—Yes. They would go into the research labs and research for three months. That has two impacts: first of all, they get to see industry; but, more importantly, the industry scientists they are working with get to think about them as somebody they may want to collaborate with in the future and the like. If you go a little bit further, in America you start to see this opportunity for academics to move into industry and for industry folk to have a joint appointment in academia where they are actually expected to participate in lecture series and supervise graduate students. We do have a lot of PhD students inside Pfizer—they are doing their PhDs inside Pfizer—so that is a great thing, too. We get to look at these students early on and decide whether we are going to recruit them at the end of their PhD, and things like that.

One of the problems that we have in Australia is that people are career trapped: you are an academician or you cross the boundary and go into industry. We do know that knowledge doubles every five years, so if you are an academician you cannot really afford to be away from the coalface for very long, focusing on business issues, as your science career is off ahead of you if you want to jump back. So there is the difficulty in Australia of streaming.

The other thing is that in Australia we tend to feel that, for people going into industry and maybe setting up a start-up company, failing is a bad thing. This is not the attitude in America. They are seen as people who ‘had a go’. The fact that they failed is unfortunate, but it could have been for any one of a series of reasons. So you will see a lot of young CEOs over there who have two or three scars on their arm from companies that have actually failed. But the good part about that is that they learnt: they had a wonderful experience learning how come they ran out of money before they got their first product into phase 1 or why the deal they did with this company was not as valuable as they had thought it to be. There is this slightly different culture in Australia. Is it changing? The good news is yes. I am seeing many more start-up companies, young people coming out of academia to have a go as chief scientific officer of their own little company.

Is there more we can do for them? I think there is, because I think we have to look at issues of taxation around share options and equity that these young people might take in their own company. They might own 30 per cent of their company, but that is a nominal asset. It has no value until that company actually does something. I saw in *Backing Australia’s Ability* that there is to be a review of share options and equity particularly to get these young entrepreneurs to come out of academia and have a go. The fear of failure is there, but I think if the financial reward is there they will certainly give it a go. I hope that addresses your issue.

Mr ANTHONY SMITH—Yes, it does. That is useful

Mr Latham—Tony, you asked what business can do. What the industry can do is very important. I do not know whether you are aware of this, but the pharmaceuticals industry—including academics, generics and the whole of medical health—have put together an action agenda with the support of the government and have set pretty lofty goals: what we need to do to double the size of our industry within 10 years. Obviously, by doubling the size we do not mean by Australia spending twice as much on pharmaceuticals as it does today. We are talking about export; we are talking about making a base for Asia and the rest of the world.

The people that were involved in this spent a lot of time and a lot of passion. As I said, these were Australians seeing the industry growing worldwide but saying, ‘How much more of that pie can we get?’ That action agenda is now going into cabinet; I think it is being reviewed by cabinet. But it then needs a commitment. Australian management of pharmaceutical companies really wants to do something and it is now up to the government to take that on board. I suppose we are looking for a champion—somebody who can see the pharmaceutical industry not as an evil empire but as something that does have a lot to add, putting aside the issues that you always have with PBS and seeing the benefits of attracting investment, whether it is R&D or whether it is manufacturing of base materials.

The report that KPMG did for us showed quite clearly the benefit to Australia of getting one plant. The example we used was a figure of \$US300 million. That would generate additional economic benefit to Australia of \$5 billion over 20 years. So for every \$US100 million, you would get \$US1.7 billion. It also pointed out that Singapore, which has identified this and is providing the incentives to attract it, has attracted in the last six years \$US1.8 billion worth of investment. If that were to happen here, you would get \$US31 billion over 20 years. Singapore gives tax incentives to do that, but there are other ways that the government can help. As I said, it needs a champion. It needs somebody to say, ‘Yes, there is a benefit from getting on board with this.’ We have done a lot of work with it and we will not be giving up. We will be pushing as much as we can to get the understanding across, and not always when we talk to the government about the PBS and the issues of the PBS. The funding of that will always be there. It is the bigger picture that we want—to get the investment here for employment, for people to do research and to build a knowledge nation. The funds are going to be spent. Whether New York spends them or London spends them, in Europe or in Singapore, they are going to spend the money. The 21st century is going to be the century of medicine. People will continue to discover new molecules and they will have to make the base materials. Where are they going to make them? At the moment they are going to Singapore.

Ms GRIERSON—I take your point. I think it is an important one and one we have to flesh out a bit more. From what you have said and from the figures you have given us, it is obvious that your company imports more than it exports and that the difference is taken up by domestic sales, which of course have a limit. That is a concern because, for Australia to gain the most benefit, we want you to export more than you import in terms of materials. You are saying that we still do not have the sharp edge of the whole activity here in Australia and we will lose that opportunity if we cannot compete with Singapore for the Asia-Pacific market. I think it is important for you to tell us a little more about the action agenda—what it contains and what support you are asking for—because there are those benefits. Going back to other factors you have raised, Pfizer came here 45 years ago, is that right?

Mr Latham—Yes, in 1954, I think it was.

Ms GRIERSON—My perception is that it was not just for a domestic market but also for skill, talent and training.

Mr Latham—Certainly, for the domestic market prior to 1954 Pfizer products were available but they were imported through a distributor. Pfizer has been around for 150 years. I do not know when the first Pfizer product was sold in Australia but it would have been well before 45 years ago. Then the decision was made to build a manufacturing plant. It was a chemical business back then as well. Today it is mainly pharmaceuticals and consumer products.

Ms GRIERSON—Is purchasing Parke-Davis a commercial decision in terms of expanding investments or is it to do with intellectual property or taking out a competitor to reduce your competition? I think it is important for us to know why that decision was made here in Australia, because it perhaps outlines directions that you need to pursue.

Mr Latham—The acquisition of Parke-Davis was not a decision taken in Australia; it was a worldwide one. That was the acquisition of Warner-Lambert.

Ms GRIERSON—All right, then that is not as relevant as I thought it might be.

Mr Latham—But the whole question of why companies get together, why one company takes over another, is very pertinent. People say that the reason for that is globalisation and consolidation within the industry, but it is really the cost of research. The cost of researching drugs becomes more and more expensive, and the only way that drug companies can continue to put the money in is through this consolidation process.

Ms GRIERSON—Yes, some aggregation in mass.

Mr Latham—That is right.

Ms GRIERSON—It is critical for us to know the sorts of factors that are more important. Once we would have relied on our training and our technical expertise or our ability to do things. That is not enough in a competitive, globalised world. You talk in your submission about incentives for your employees, through share options and equity in the company, but who gets them? Do scientists get them, do the people who are developing these opportunities get them or do administration get them?

Dr Ketelbey—I might ask Kevin to explain the US example.

Dr Fahey—Initially, of course, share options were at the very top of the company. Certainly, Pfizer, and most other companies, are now rolling those share options right down through the infrastructure. Senior scientists in Pfizer now benefit from share option plans. So they get a small piece of equity in the company that they are working for. The comment in the submission largely relates to spin-off companies in Australia where we are trying to get young academicians to come out and have a shot in industry. We would bring their science out to form a company around it. The only thing that we can really induce them to come out for is equity in their own company, and that is where we need some sort of tax treatment that does not penalise them in any way for coming out and having a go.

Ms GRIERSON—You talk about specialisation and supporting specialisation in your industry. How do you specialise? In Australia, do we specialise by the number of companies we have in an area, by the area of medicine we want to pursue, by the area of medical treatment that we need or by research that says: this is the next big killer of people. You talk about Australia needing to specialise. How do we specialise in your field? Do we say that we can only afford two or three big companies, we can only do this or we want to do that?

Dr Ketelbey—We all appreciate that the engine-room of the pharmaceutical industry is always going to sit within the US and Europe. What Australia can provide, though, is the important seed ideas, niche areas of research that can be brought in to form part of the whole. We have seen this so much in the recent collaborative agreements that we have struck with researchers across the country over the last few years.

There are 36-odd collaborative agreements that have been struck with everyone from the CSIRO to just about every university in Australia, biotech companies, hospitals—institutes across the country. These might be everything from a small idea that just requires \$50,000 of investment to a number of millions of dollars of investment. But all of them represent a particularly specialised area of research and development or technology that is not available anywhere else in the world. Clearly our researchers have been scouring the world for this piece of technology, have identified it here in Australia and have struck an agreement to develop it further in Australia. Each of those represents a specialised area of research that is very difficult to identify up-front, but it is clear that it forms part of the whole research picture on a global basis.

Ms GRIERSON—Has Australia delivered a big winner for the parent company yet—not just success but the big one?

Dr Ketelbey—We could say that the big winner that we missed is in relation to the Colony Stimulating Factors that were developed in Melbourne. They have become the engine for the whole Amgen multinational corporation. These were products that were developed but were not fully exploited for Australia, that became global international brands worth many billions of dollars. This reflects what we can do; unfortunately, we missed the boat. The important thing is that we do not do it a second time.

Ms GRIERSON—Yes, I would agree with that.

Dr Fahey—Going back to John's point, the whole process from idea to product is about 12 to 15 years. We have really only been ramping up our R&D spend over the last five or 10 years, so it is still early days. Some of the research collaborations that we have established in Australia are quite unique, in Pfizer's estimation: the drug targets we are going for were discovered in Australia and it has been very exciting. I cannot promise anything but there is certainly the start of something that we believe could be very fertile.

Ms GRIERSON—We want it. If you have ramped up the R&D content—and that is what we are investigating—to 17 per cent globally of Pfizer, what percentage of activity are we up to here in Australia?

Mr Latham—We are running at about five per cent in Pfizer, but I think the total research of our industry as a percentage of the local sales is around one per cent.

Dr Ketelbey—I think the important thing to recognise is, while five per cent does sound low on an international basis, it was much closer to zero per cent 10 years ago, so we have made significant headway in the last 10 years. The important thing is: what is the next 10 years going to give us?

Ms GRIERSON—Collaborations have been very much part of the research culture in Australia. The public sector has had a great deal of investment from government in terms of research. Is that a model used by Pfizer at other places or in the main research areas is it your own work and your own people employed in your own facilities? Is that a problem down here? Are we perhaps not as good at the collaborations as we need to be or do we need to change the model?

Dr Fahey—I will answer that question in a slightly different way. The big difference in Europe and America is the amount of industry funded research, and that comes with quite good focus and direction. The PIIP scheme and factor F were a start at having industry involved in directing the spend so that the spend had a more commercial focus or perspective or opportunity at the end of it. That is what I would like to see happen a little bit more in Australia. We are spending a lot of government money on medical and scientific research. We would like to see industry more involved in making the decisions on those spends. Through the tax concessions and the PIIP scheme, we were able to start to do that—to help people really focus on what we believe to be the important elements of a commercially based R&D effort.

Ms GRIERSON—An industry that is more inclined to invest in that would be the suppliers. You are telling us we do not have enough of those suppliers here in Australia that might be conducive to that sort of investment. Does Pfizer control much of the supply chain? Are you importing the ingredients for your manufacturing activity from other companies or does Pfizer tend to have a lot of that supply chain itself?

Mr Latham—We import the active materials that we discovered and make. We do not sell our active materials to other companies.

Ms GRIERSON—So it is an internal supply chain.

Mr Latham—Basically, we bring in those active materials and what we do in Australia is finish. It is secondary manufacturing. We do encapsulation, we make tablets and ointments, but we import the intellectual property of those base materials into Australia. That is what I would like to see us do here. As I said, we were in there with Singapore and we pushed to get the plant in Australia—\$US500 million—but it went to Singapore. The Singapore government were there.

Ms GRIERSON—It would have been good. It would have been wonderful.

Mr Latham—That is what really makes you cry, when you see something like that.

Ms GRIERSON—If the action agenda is on the table, would you like to outline some key items? I imagine it is very holistic and takes in everything, but could you outline some key factors that you think are important to expanding the operations of Pfizer in a way that embeds them further in this country?

Mr Latham—I suppose one of the major ones is to build an environment that is positive, where the government sees the benefit of the industry. I said that we want to double the size of the industry and become more export focused, and that is it in a nutshell. It is not about dismantling the PBS or anything like that. It wants to have a viable, sustainable pharmaceutical industry. We do not want to go the route of New Zealand. New Zealanders have made the decision that they do not want an industry; they want the cheapest drugs from around the world. The people have said that that is what they want. In Australia, though, we want to see more benefit and not just see the pharmaceutical industry as a one-line item on a budget, but see all the other things that the industry can do—provide jobs and knowledge transfer and be an export earner. That is really what we want to see.

Ms GRIERSON—Certainly. That is the one that will convince.

Mr Latham—You get hit over the head for many years, and sometimes it can get you down. You want to change that around because by going to different places you can see what the industry is doing around the world, and it misses Australia. That is what the action agenda is setting out to do. As I said, we need a champion—somebody in government—to pick that up and run with it. Senator Button, for example, did the factor F scheme and pushed it through. We need somebody to say, ‘We think there is a benefit in this industry and we’re willing to support it.’ We can look at the numbers and the numbers make sense, but we can also see what we are missing. There is no accounting for the investments that you lose. This document actually shows what you lose and the impact of that. So that is the action agenda in a nutshell.

Ms GRIERSON—Thank you.

CHAIR—Dr Fahey, you mentioned before graduate and doctorate students working within Pfizer. One of the suggestions that has been made to this committee is that 100 postdoctorates be jointly funded between government and industry to ensure that we get some of those doctorates out into industry. Have you any comment on that?

Dr Fahey—At first pass, I would probably support that. But it would be almost incumbent on those people to go to the Northern Hemisphere to do their one year of postdoc or whatever it is that they are going to do with that support. So I think that would be great. Some of them will be attracted, unfortunately, to stay over there, but others will come back. I do not know that it is a bad thing that they are attracted away for a short period of time as long as we have really viable propositions for them to come home and work in Australia. I came out of CSIRO and went into industry and the learning curve that I got on was incredibly steep. Working in industry is literally eye-opening and it would do a lot of postdocs the world of good to see that as a viable career opportunity.

CHAIR—I think the suggestion was for them to work here. I can see the advantages of getting that global experience as well, but I think the suggestion was designed to help get those people into industry with industry paying 50 per cent and government paying 50 per cent. I do not think the government would pay 50 per cent for postdocs to go overseas, as the whole idea was to try to keep some of them here. Although, in a broader sense, I agree with your comments.

Dr Fahey—There are some laboratories around Australia where you could get that experience, but the real pressure cooker experience is definitely in the big companies in the Northern Hemisphere.

CHAIR—This was a suggestion right across the spectrum not just for pharmaceuticals. Are you saying that there may not be the positions in the pharmaceutical area?

Dr Fahey—There would be some.

Dr Ketelbey—A much more sustainable way of employing these people would be, if the environment were such, to develop the research units within the companies. I bring you back to the biometrics unit. Having won the right to place the biometrics unit in Australia, we will be employing upwards of 50 highly specialised statisticians and data managers within Australia, in a professional area that is very specialised and where there is very little private employment available. So the fact that we were able to attract that unit to Australia has already allowed us to employ a number of postdoctoral Australians and to keep them within Australia. Had we not been able to attract this unit, it would have been inevitable that we would have lost many of these people overseas.

CHAIR—In the work that you do in collaboration with universities, what has been Pfizer's experience in Australia with respect to patents and IP? Have you any comments?

Dr Fahey—Intellectual property is obviously a very broad subject. At the moment, we are focusing on the fact that we do not need to own the intellectual property when the intellectual property is what I would call 'enabling'—it helps you to identify a novel target for drugs to validate that target and to get some sort of mechanistic data around it. The critical thing for Pfizer is to own the active—the very drug substance itself. That is what we truly need to own at the end of the day. A lot of intellectual property is created through these sponsored collaborations, which we leave in the university or the biotech company which we collaborate with. But we might then take a research licence or a non-exclusive world licence or we may need, in some instances, to take an exclusive world licence to a particular application of that technology. There is now a whole range of different licensing deals that we enter into. The one that is most talked about in Australia is when the multinational ends up owning the IP. To us, the rarest of all of our licensing agreements is where we need to own the IP. We are getting better, too. We are now coming forward with much more creative ways of handling intellectual property from collaborations.

CHAIR—In comparison with the rest of the world, does the system within Australia work well?

Dr Fahey—Yes, it is very good. In fact, our patent attorneys in Australia are getting better and better. The more they do, the sharper they get and the more they learn.

CHAIR—My colleagues have covered everything that they want, so thank you again for your submission and your evidence today. We appreciate it. Did you want to table a particular document for the committee?

Mr Latham—Yes, but it is a draft.

CHAIR—Do you want to record it as a draft report?

Mr Latham—We have already had discussions with Invest Australia about this. They were going to review it and maybe put some comments in. The document as it stands may change, but I think that that is okay.

Resolved (on motion by **Mr Smith**):

That the document, *Medicines Australia: comparing Australian & Singaporean investment environments* by KPMG, presented by Pfizer Pty Ltd, be received as evidence to the committee's inquiry into business commitment to research and development in Australia.

[11.12 a.m.]

GILLMAN, Mr Kevin, Managing Director, AV Syntec Pty Ltd and Manufacturing Leaders Group

STODDART, Mr Bill, Managing Director, Tom Stoddart Pty Ltd and Manufacturing Leaders Group

CHAIR—Welcome. I thank you for making the effort and taking the trouble to come from Queensland for today's hearing. I know you would have had to start pretty early today to get here, and the committee really appreciates you doing that. I point out that, while the committee does not swear in witnesses, the proceedings today are legal proceedings of the parliament and warrant the same respect as proceedings in the House. Deliberate misleading of the committee may be regarded as contempt of the parliament. The committee prefers that all evidence be given in public, but should you at any stage wish to give evidence in private—if there are any confidential matters you would like to raise—you may ask to do so and the committee will give consideration to your request. You may like to make an opening statement before we go to questions.

Mr Gillman—The Manufacturing Leaders Group is an advisory body which was established by the Queensland Minister for State Development, the Hon. Tom Barton, in February 2002 to assist the state government with the development of a manufacturing strategy for Queensland. The MLG is made up of representatives of industry, government, academia and the unions participating on a voluntary basis under the minister's chairmanship. In advising on possible strategies to address the performance of manufacturing, the MLG has targeted a number of priority manufacturing industry groupings selected for their present and future potential contribution to the Queensland economy. It has also focused on seven theme areas considered crucial to manufacturing's competitiveness. These are enhancing the image and profile of manufacturing; developing a leading-edge skilled work force; building export performance; improving supply chains and networks; growing manufacturing investment; increasing innovation, R&D activities and technology adoption; and, supporting regional manufacturers and embracing environmentally sustainable work practices. The innovation R&D group is therefore focused on this aspect in manufacturing in Queensland.

General R&D statistics are well published in relation to business and the public sector and by state. I am sure you are aware of those. The poor rate of expenditure relative to best practice countries is also well known. In the manufacturing sector, we have a clear dominance of SMEs and a focus of R&D in large firms. In fact, 96 per cent of manufacturers undertake no R&D, the majority of R&D undertaken is self-funded and 2½ to three per cent of expenditure is assisted—with most assistance going to larger firms. It is therefore clear to our committee that overcoming the barriers to R&D amongst smaller firms requires priority consideration. Research indicates that the barriers include the cost of available funding, the time and complexity of seeking assistance, the limited internal resources, the lack of knowledge of the benefits of R&D, and inconsistency of assistance programs and the reliability of programs.

We therefore have a situation where many manufacturing companies are not yet aware of the potential benefits of innovation and have no strategy for developing, acquiring or

commercialising new technologies or processes—as is reflected in the relatively low levels of business investment in R&D. Where it occurs, the take-up of new technologies and the results of the existing research tend to be highly applied and project based, with few firms likely to undertake formal R&D programs independently due to resources constraints.

The Manufacturing Leaders Group's research and consultation suggests that, where firms are prepared to innovate, practical benefits are more likely to be delivered quickly where the investment is an expansion or a streamlining of production capacity, using a technology or a process that already exists and is verifiably applicable, rather than a formal R&D program. The range and accessibility of suitable technologies developed internationally is far greater than can be delivered in the short to medium term by relying mainly on outcomes of Queensland or Australian activity. In the circumstances, assistance that aims to deliver greater awareness of innovation and promotes the diffusion of existing technologies is likely to have the greatest attraction for and impact on the majority of Queensland companies. The main focus of the new initiative proposed is therefore technology diffusion.

The achievement of significantly higher levels of investment in R&D in Queensland nevertheless remains a very important objective. A concerted technology diffusion program will result in higher levels of awareness of innovation and take up of advanced technologies. This in turn will both strengthen the local technology base and improve the prospects of future R&D expenditure as company cultures and practices change. There are many organisations with a role to play in technology diffusion, including QMI Solutions—previously the Queensland Manufacturing Institute—research institutions such as CSIRO, CRCs and universities and industry associations. However, government can play a valuable role in facilitating and coordinating the contribution of the stakeholders. We will be recommending to government the preparation of a technology diffusion action plan that will ensure a whole-of-government, integrated and comprehensive approach to technology diffusion in relation to manufacturing.

The plan will include a range of initiatives: to increase general awareness of the benefits of manufacturing innovation, to improve knowledge about and take-up of specific technologies, products and processes to improve manufacturing performance; to enhance collaboration between industry and research institutions, technology developers and suppliers; to encourage participation by companies of all sizes and in all locations, with particular emphasis on SMEs; to improve accessibility of innovation and R&D support programs with emphasis on programs and delivery methods best suited to the needs of the individual clients; and to improve the capture of accurate information on innovation, R&D and technology diffusion, particularly in the Queensland manufacturing sector. Support programs from government are essential and need ease of access, to be well delivered, consistent and reliable, to extend to assisting commercialisation and to have clarity and coordination in the state and federal arena.

Mr Stoddart—I have a copy of a submission our company made to the Minister for Innovation and Information Technology in June this year.

CHAIR—That is the Queensland minister, is it?

Mr Stoddart—Yes. The letter relates to the MLG recommendations and probably reinforces them, so I will read it out:

Dear Minister,

R & D Strategy Issues Paper

Thank-you for allowing us the opportunity to comment on the above named document. Please find below my comments, which I trust you will find helpful.

Firstly, let me say that I welcome the government's commitment to increase expenditure on R&D and making it a priority area for the State. We applaud the key principles of the strategy (issue 1), and see potential benefit for ourselves and other similar companies in a wide range of industries across Queensland should these goals be fully realised.

By way of introduction, I thought I may briefly describe our company's business, to help put my comments into context. Stoddart have been a manufacturer of sheet metal and associated products since 1959. We presently employ over 250 people including over 30 apprentices. A large proportion of our work is for export or competes against imported products. To stay competitive we invest a significant amount of our funds into R&D each year. Our primary benchmark is to be world class and world competitive in our output and production techniques.

The Strategy Issues Paper clearly points public policy towards knowledge creation and innovation. This is undoubtedly a worthwhile aim and one that I am sure we and other companies will benefit from in years to come. The paper is clearly focussed on professional and academic research at the knowledge creation phase rather than at the implementation end of the spectrum—where our interest lies. Whilst there is great value in ideas generation and service industries, this sector of the economy would be badly starved of wealth if a strong manufacturing sector do not at least co-exist but preferably thrive.

As a manufacturer, our investment in R&D is more applied than conceptual and aimed at achieving immediate goals; this is probably echoed by many other manufacturing companies throughout the state. Our R&D is focussed on two broad areas, these being—developing new products and improving systems for manufacture. Often this work is not about generating uniquely new knowledge, but gaining practical advantage through applying existing knowledge or technologies that are often untried locally. To maintain competitiveness against low labour cost countries we need to adopt this technology and address issues such as:

- Product development—ensure velocity to market;
- Innovative product design—particularly in niche markets;
- Efficient manufacturing management systems including ERPs;
- Utilisation of effective manufacture machinery and processes;
- Innovative employee training and involvement;
- International marketing skills including opportunity identification.

In other words, we are most interested in developing ways and means to harness ideas, technologies or knowledge that best strengthen our strategic position. I do not believe that the Strategy Paper places enough weight behind this vital area of R&D. The data represented on page 25 of the paper shows Queensland has been historically poor in this area. The chart shows that only 5.4% of government R&D funding goes towards General Engineering, yet 38.3% of total business R&D expenditure is in this area (figure 6). Compare this imbalance with that of agricultural science or Biological science, where the inverse is clearly true. The paper states that companies such ourselves may be using R&D here as a means of maintaining a “competitive edge”. Of course we are, but does this make it less worthy of funding?

Throughout our 42 years of operation we have had basically no direct government funding for R&D. In part, this is due to our own inability to secure funding through the various sources available. However, we have often not tried to access funds because programmes are too restrictive or too bureaucratic for companies like ours to utilise. The majority of funding appears to be targeted at emerging technologies not existing ones. However, many successful world economies such as Germany and Japan thrive through balancing expenditure on researching emerging technologies with developing products and applications for these technologies in particular in the manufacturing sector. We believe our growth pattern would have been faster, more successful and more fruitful to Queensland had there been a more pro-active culture of business-government cooperation. It is in this area that I believe a major realignment of policy and practice needs to take place.

Stoddart have traditionally expended large sums of money in acquiring world leading manufacturing machinery and design software, in almost all cases from overseas. Most of the research in the area of metal forming machinery and techniques 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. The challenge for the government is to support manufacturing by allocating a fair share of the R&D budget towards our industry's needs.

Stoddart are proud to be a member of the Manufacturing Leaders Group which has been established by the Department of State Development. We see this as a symbolic and practical step by the Government to develop manufacturing in this state. However, in this context manufacturing must be seen, promoted and encouraged to be innovative. The widespread emphasis on new self-serving technologies has caused harm to the image of manufacturing and threatens our long-term

growth. For example, over the last decade we have found it increasingly difficult to source quality young people to fill our apprenticeship programmes, because many see our industry as “old economy” and strategically inappropriate for Queensland. Whilst we have done our best to downplay this image, through the high technology processes we use, it is hard to battle the combined messages of media and government. Unless the government continues to promote manufacturing as a smart industry, the prognosis remains somewhat bleak.

There are a number of avenues to assist R&D in manufacturing. Apart from investing directly in industry, the government’s commitment to academic and practical research in this area is vital. One such resource in which we place great stall is the Queensland Manufacturing Institute. QMI is a world-class facility, with a team of manufacturing professionals who can add significant value to the local manufacturing sector if appropriately funded. As a manufacturer we have a great deal of confidence in QMI and believe an ongoing strengthening of this body has the potential to bolster manufacturing throughout the state. Their ability to talk our language by understanding the manufacturing environment both here and abroad makes them an integral part of driving manufacturing growth in Queensland.

Stoddart will continue to invest in R&D, as it is an essential part of business’s past and future success. We hope to continue the rapid growth we have experienced over the last 10 years and continue to maintain a strong local supply chain. Our ability to grow further, would be greatly enhanced should the Government commit itself to supporting ongoing R&D in manufacturing as a vital policy platform.

Once again, thank you for the opportunity to contribute to this process. I trust my comments are useful and provide some positive means to enhance your strong commitment to innovation.

Ms GRIERSON—A lot of people in your business in New South Wales would tell me that Queensland has already got the advantage and that you have some incentives like lower payroll tax et cetera. Do you think that there are some advantages in Queensland that perhaps are not in other states?

Mr Stoddart—Yes, I think that the payroll tax helps. At one stage during our development we operated a manufacturing facility in Sydney but after 11 years, 1987 to 1998, we moved the facility back to Queensland. The difficulty in trying to get the culture that existed because of the age of the company into a business that we acquired in Sydney was the reason. But basically it was due to the cost factors and the reverse transport advantage that Queensland has because the heavy transport direction is from New South Wales to Queensland and back loading is at much lower rates. Obviously there are some economies in manufacturing in Queensland.

Ms GRIERSON—Has a big power station gone in up in North Queensland? Is that what is happening—some big plant up there?

Mr Gillman—I am not aware of that.

Ms GRIERSON—My local manufacturers tell me that there was a commitment in that contract that the supply of products and services had to be by Australia. Are those sorts of arrangements fairly frequently made in Queensland?

Mr Stoddart—I would think that the price advantage for local suppliers is less than two per cent so it is not significant at all, be it a federal or state government funded project. You have very much got to be world competitive to win government work.

Ms GRIERSON—Your statistics about small and medium enterprises are ones that we are coming across in many submissions. So many of them are not spending anything on R&D, finding it too hard and complex and yet the benefits to them would be excellent. Do you have a working party particularly looking at the needs of small and medium enterprises? Are there any comments you would like to make on how SMEs could be assisted?

Mr Gillman—There were a couple of issues we found when we were doing our studies. The statistics show that it is pretty dire—that 96 per cent are not investing.

Ms GRIERSON—Shocking.

Mr Gillman—One of the other things that we did find was that a lot of companies are doing R&D—

Ms GRIERSON—And not declaring it or not seeking assistance.

Mr Gillman—They are not involved so therefore they are not maximising it. It is not being used then as an on go to show the rest of industry. That is why we have said that it is something that we have got to get to. We really need to get to those who are involved and those who are being successful with it. The other issue that came out in submissions when we had our round-the-state conferences was the difficulty in this area. Bill's company is fairly big and they find it difficult but certainly the smaller companies constantly said, 'It is too much of a hassle and too difficult.' I think there is an education factor there. The programs are not made easy enough, they are not coordinated and they are not consistent. It is certainly an education thing.

Ms GRIERSON—Are Queensland manufacturers good at clustering? Have they been doing that traditionally or is the fact that government have had to do that state wide a sign that perhaps they do not cluster and support each other as an industry?

Mr Gillman—They have not been good at it but there is a change. There are now one or two clusters that have been formed that have needed that mentoring or facilitation. The government has done that successfully with one group in the metals industry and that is certainly helping when they need to go and quote for those power stations and jobs like that. But traditionally they have always had the reticence about working with their opposition. Unless you overcome that culture you are not going to improve it. But it is starting to move.

Ms GRIERSON—I think that it is important. I notice on your list of people on that group that the mining industry are not represented. Are they still a significant user of the manufacturing industry in Queensland?

Mr Gillman—There are some mining industry people on there.

Ms GRIERSON—It is probably that their names do not jump out at me. That is all right.

Mr ANTHONY SMITH—I want to follow up on the idea of clusters. It was quite interesting that there has been a natural inhibition of clusters—I suppose it is the flip side of competitiveness—but you have said that a couple of them have come on. Where are they in particular? Are they in some new areas of manufacturing? And where are they located?

Mr Gillman—The main one is in the metals area. It is in metals processing.

Mr Stoddart—Talking about clusters, part of our market is in commercial kitchen manufacture and our largest competitor is only—

Mr ANTHONY SMITH—I saw that you were in stainless steel; you would pretty busy.

Mr Stoddart—Yes, we are. Three hundred metres up the road from our company is our competitor. It is a bit coincidental how it happens, but it works fairly well in attracting skilled tradespeople and customers to the area. There is an advantage in that regard.

Mr ANTHONY SMITH—Do you think that can have knock-on effects to some of the other manufacturers in other industries nearby? I see that this sort of thing is working through chambers of commerce and that sort of thing.

Mr Stoddart—Through associations; we have got a national stainless steel development association that is run from Brisbane. It has membership, on a broad front, of suppliers and fabricators. There is a strong involvement of exchange of technology and ideas within the association and breaking down that secretiveness that occurs in some competitive work that goes on.

Mr ANTHONY SMITH—You were talking about the great obstacle of programs—small and medium sized enterprises interfacing with government programs. To summarise, you said there was a mix of issues, including that businesses did not know about the programs and that when they did apply they found it difficult. Would you concede that, while things can always be made better, whether they are state or federal programs—I am not particularly talking about federal programs—there will always be a difficulty, by nature, in the fact that they are small and medium enterprises? These enterprises are not interfacing with government all the time and they do not have the resources that larger firms have. Do you think that some of the associations could play a role there and liaise with state and federal governments on the user friendliness, if you like, of the programs and the two-way street of accessing them?

Mr Gillman—No doubt, very much so. The industry groupings have definitely got a role to play. You are never going to get 100 per cent; you are not going to get a lot of the—

Mr ANTHONY SMITH—There will always be a form that has to be filled out.

Mr Gillman—Absolutely, and there are a lot of small businesses that will not come into it. The balance is just far too much one way and there are a lot of companies that really should be even more innovative and be accessing the programs and the education side of it. Part of our work is how we are going to do that. Certainly, the industry associations are on the MLG and we want to make use of them.

Mr ANTHONY SMITH—That is good. Anecdotally, you seem to get this impression that those that know how the programs work tend to do fairly well, and you will come across other small and medium enterprises that have never heard of these sorts of initiatives.

Mr Stoddart—Most of our R&D is in product development, and we can do that in-house. We are well aware of the tax concession claims that we are able to make each year. But we do manufacture under licence, or have a manufacturing agreement with other parties that own their own product or IP. We make a microprocessor driven coffee machine that can make a cappuccino coffee in 20 seconds and we are trying to sell that.

Mr ANTHONY SMITH—Wow! Where do you get them?

Mr Stoddart—We are trying to sell it to McDonald's. In the fast food industry it is applicable.

Mr ANTHONY SMITH—Okay.

Mr Stoddart—It uses soluble coffee rather than roasted ground coffee, so there is no waste product. Most fast food industries talk about 'footprint' on their workbench, so in building it we are trying to make the unit more compact. We have a start-up grant and we had it at the point where we were about to take off with it, but that program was suspended. In the last couple of years our company has learnt more about the opportunities of getting funding for R&D, but that certainly shook our confidence a bit. We understand that it is in review and it may be reintroduced, but the parent company that we work for is in a start-up phase and is not able to just go and fund that development of a more compact machine itself. So the process has been suspended for the time being.

CHAIR—I assure you that it is not a case of it being reviewed and maybe being reintroduced. It will be reintroduced. It was simply suspended because the take-up of funding was substantially greater than anybody could have predicted. So I would encourage you to ensure that your application is back in when it comes back, probably later this year or early next year, I think.

Mr ANTHONY SMITH—That sounds like one that is working well and is not too hard to access.

CHAIR—That is right. That has been a problem with that R&D. It was not so much the take-up but the forward calling of the ones that were approved was well beyond what anybody would have predicted. The overall money over the four- or five-year period under Backing Australia's Ability is certainly all there, so there will be a continuation of it.

Can I just pick up on the small and medium business aspect and trying to find ways to get small or medium companies investing in R&D. We had evidence yesterday from Intelligent Manufacturing Systems Australia, which organises collaborative research on an international basis. They have been able to pull together smaller businesses that traditionally would be competitors. It seems that the fact that they are competitors is one of the things that comes up constantly as a reason why a lot of small businesses will not work with other small businesses to give some sort of critical mass for R&D. But they have successfully found ways of doing that. I do not know whether you have looked at that particular model. Also, in agriculture, the rural research and development corporations have been very successful in carrying out a lot of research and development funded by a levy system, because agriculture is effectively a whole series of small businesses competing with each other, in many respects. Some great research has been done in that regard. Are those two models things that you have looked at?

Mr Gillman—We are aware of both of them. We had a submission from IMS and they presented to the group. It is certainly in the mix. We saw it a little bit more at the bigger end again. I got the impression that they got more medium to large businesses than SMEs because they were mainly working in the international collaboration area. Certainly, the agricultural sector has had a good history of R&D because of the common benefit. That is something that we need to take into account if we can, but it is still very difficult to try and get that collaboration at the really small end.

One of the other difficulties is getting companies ready for R&D. I think a lot of it even comes back to a stage before that, in their business planning. I think that general business mentoring would certainly lead to them recognising that being innovative and doing R&D is going to benefit the business. We both mentioned QMI. They are a unique organisation in some ways, but they offer some great programs in that way. For example, some of their programs on proceeds and accelerated product development are excellent programs. They have also got some tiered programs. It is that sort of mentoring that you really need.

When you also look at collaboration, I know a lot of money is going into the CRCs. Our company is in a CRC; we are currently running start grant, and so we are very involved. But a lot of companies would not have a show of getting into a CRC because they would be too small. The CRCs that I see are too dominated by the universities and the high end. So there needs to be some rethinking in that area of the CRCs if they are going to be funded that much.

CHAIR—On that point, you would presumably be supportive of the changes that have been made in the CRC structures for this next round because the new CRCs will allow for what are called ‘small to medium enterprise clubs’ to bring a number of small firms into one entity. I do not think that was possible under the old structure.

Mr Gillman—The benefit would be that the administrative burden would be carried more by the group than by the individual company.

CHAIR—That is possible with this new round of CRCs.

Mr Gillman—That would certainly be of benefit.

CHAIR—Intelligent Manufacturing Systems Australia’s submission commented that in their program Australia ranked first in participation by SMEs but lowest in participation by large companies. You might just keep that in mind and have another look at that. The other benefit of having you here today is that you are both from small to medium enterprises, and we are certainly trying to get to the grassroots of how enterprises of that size operate and how they access any R&D assistance et cetera. Have you any experiences that you can share with the committee about accessing finance specifically for research, product development et cetera outside of the grant programs?

Mr Gillman—We have been in R&D from day one; that was 25 years ago. We are not a large size but we have always developed our own products. We have a fairly large R&D component for our size. I guess our decision is always: we are going to do it anyway because we have got to; we have got to have new products. We export 35 per cent of our manufacture; therefore, we have got to be out there competing. If we do not do it, we are going to go backwards. So self-funding is always a struggle because it comes out of your general funds. You cannot borrow just for R&D. The venture capitalists or whoever want half the farm, and it is just too difficult.

CHAIR—Have you tried it with the banks?

Mr Gillman—As I was saying, it is general funding. You cannot specifically say, ‘We need that for R&D.’ You have got to build it into your total finance. It is not just the funding that is a difficulty. One of the other difficulties that certainly our company has found is the issue of skills. Skills are being addressed by a separate section of the MLG in general terms in the

manufacturing industry, but in the R&D sector we find it very difficult to get practical chemists or scientists. They do not seem to be doing science degrees. For love nor money, we cannot get a technician in Queensland. There are no technicians trained. We have got one going through at the moment. It is just unbelievable the difficulty. It is probably the same thing in apprenticeships, although Bill can talk about that. The TAFEs are not there; they are not doing those sorts of courses. That does not help our cause. I had to bring our last three chemists from Melbourne or Sydney. That might not sound a lot but it is an extra expense.

Mr ANTHONY SMITH—Would you trace that as a breakdown of the apprenticeship system over the last 10 or 15 years—although it is coming back now—

Mr Gillman—Technicians particularly; and engineers, chemists and so on.

CHAIR—So tertiary trained as well.

Mr Gillman—Absolutely. It is a real problem.

CHAIR—What sort of percentage of your turnover would you reinvest in R&D—if that is not a commercial-in-confidence question?

Mr Gillman—We would put in in excess of three per cent.

CHAIR—Bill?

Mr Stoddart—I would say three to five per cent. But it is oriented more towards the product development side rather than research. You asked a question about funding. We use a bank to provide funding, but it is mainly not for the development of a particular product but for purchasing the latest manufacturing machinery or software to do the product development that we seek the funding. We pride ourselves in putting a lot of the profit that we generate back into the business and creating career paths for the tradespeople. A lot of our trades apprentices have gone back and done tertiary studies. We have two mechanical engineers who have completed apprenticeships but then gone back full time and done university degrees.

CHAIR—And you have assisted in that education?

Mr Stoddart—One is my son, so I suppose it is easy to assist! We gave some assistance to another fellow and his family helped him do it. He is about to be re-employed and offered work in the R&D area. Product development is the leading edge of what we do. It is where you can take a tradesperson to a higher level, especially with the software programs that are available today. Prototype development in the sheet metal arena now is done on a computer screen. You can have a brochure on a product that you have never actually physically built the prototype for, but effectively it is there. Four workstations have a software program called 'SolidWorks' that our guys are currently using to rapidly prove a product before we actually build the product.

Mr LINDSAY—Continuing on with finance, an earlier group that we spoke with suggested that the government ought to underwrite loans to help early stage development. Do you think it should be the role of government to do that?

Mr Stoddart—If we have a good idea and a good business plan, we find that the finance industry is willing to get behind us. We have never had the need to go to government. Where government can help is with some of the schemes that are accessible. One of the difficult areas for us, if the product is electrically driven, is trying to get it compliant on a world market basis. The compliance and approval cost is enormous. That is where some of the funding through government schemes comes in. But I could not imagine going to government for loans.

Mr LINDSAY—No, I was not suggesting going to government. Do you not see this problem that others face because you have the assets to put up as collateral? The concept of the government underwriting a loan is because—

Mr Stoddart—You do not have to have the bricks and mortar and a personal guarantee.

Mr LINDSAY—Yes.

Mr Stoddart—The banks get you tied up—that is for sure. There is not much choice. You go from one to the other and you can play them off against each other, but eventually the more you borrow the more demanding they are in terms of bricks and mortar and personal guarantees.

Mr Gillman—The advantage is really to the speculative industry. The Queensland government have a facilitation for venture capital, and they link with these finance angels. But it is normally people who have a very good idea, and the cost of doing that means they are going to lose half their business. I am not saying that there should be handouts, but I think there is probably some ground there for people who have good technology and who have a certain right to retain that and a desire to do so.

Mr LINDSAY—What do you think about the model that was explained to us this morning that Holland apparently has where there are small loans available which are considered to be loans if the start-up succeeds but just grants if the start-up fails?

Mr Gillman—I think it would be a very good model, but it is obviously a significant funding issue for government.

Mr LINDSAY—Does your group see any need for start-up companies to limit directors' liability in those companies? If the company ultimately falls over because it could not get the product to market or the technology did not work out, do you think there should be something in the law which says that directors of those sorts of companies are protected?

Mr Gillman—I think that goes pretty hard against good corporate governance. I would rather see a bit more education of people, because they are going to be more successful if they are going about it correctly. We are saying that trying to go behind that and make them better businesspeople will probably make them better R&D people.

Mr LINDSAY—Mr Gillman, in your opening statement you alluded to MLG picking winners, effectively. Is that right?

Mr Gillman—Yes.

Mr LINDSAY—Do you think governments should be in the business of picking winners?

Mr Gillman—What they are trying to do there is to come up with some priority industries that are targeted, particularly within the Queensland economy.

Mr LINDSAY—How do you respond to Mr Stoddart's point?

Mr Gillman—I do not say that I support it; it is a fact or life. It is part of the manufacturing strategy, not part of R&D and not part the MLG submission.

Mr LINDSAY—We have a manufacturer here who is feeling very lonely at the moment, because he is in the old economy and nobody loves him.

Mr Gillman—One of the things within our R&D submission is that, although there has been a focus on certain industries—and I can name them if you like—we are still approaching this R&D submission in a general way; that it has to benefit manufacturing industry. Certainly, there will be some focus on those industries, but the principles should benefit most manufacturing industry.

Mr LINDSAY—Would you care to expand a little on your comment where I think you alluded to the fact that 96 per cent of SMEs having no strategies for acquiring or researching new technology?

Mr Gillman—That is a statistic out of the latest Australian industry research, that they are just not approaching R&D at all. As I said before, I think the statistic is probably a little overstated or understated—whichever way you want to go—because there is also this innovation, or development, that is just not recorded. It is still very high.

CHAIR—We also talked about that last point with witnesses yesterday. What is effectively a grey area, in my view, is that there are probably a lot of small or medium businesses out there doing work which does not, under the current definitions, fall into the research and development area, which tends to be associated with certain government programs, certain tax concessions et cetera. Their work probably falls into the innovation area, and I wonder whether they should be treated in a similar way.

Mr Gillman—The point we are making takes that even a step further. There are no programs that support technology diffusion.

CHAIR—There is. I was going to ask you to about technology diffusion. There is a technology diffusion program out of AusIndustry. Are you aware of that and have you any comments on how it operates? We have had some evidence at some stage that it is a difficult program to access.

Mr Gillman—I am not saying there is zero, because QMI, for example, do it very well. But in terms of the overall spend on R&D compared with that in other countries it is a very small expenditure. And, again, it does not seem to be getting down to the SME level.

CHAIR—It would be interesting to have a close look at that because I am aware of a couple of successful programs under the technology diffusion program which is going straight to one particular industry that I used to be involved with many years ago. It is certainly going straight to small businesses in that particular industry. But it is rightly seen as a bit difficult to access.

Mr Gillman—Certainly in the rural industry you can take that as being the case but we have not seen as much in the manufacturing industry.

Ms GRIERSON—Do you think we have significantly lost skills that we used to have in manufacturing?

Mr Stoddart—It is harder to keep them. Manufacturing employers are fighting to keep the skills in manufacturing.

Ms GRIERSON—Do we have enough major infrastructure programs to keep that going?

Mr Gillman—I can only say from talking with industry at our meetings that they have enormous problems getting tradespeople to even quote on some of the major projects that are on in Queensland. As Bill said, it is a battle. They are fighting to get tradesmen to come out of Victoria.

Ms GRIERSON—I have raised it because, in my area after the demise of BHP and Telecom, the incubators of industry skills that were very major ones, we are not seeing the same sort of embedding of training in our organisations. Perhaps the defence forces have taken up some of the slack but certainly it does seem that there is a lack of an embedded training culture that is providing those skills to build on.

Mr Gillman—It certainly varies. We have one member of our group who is in the marine industry and they have set their own program up. They could not get the skills. They now take 50 or 100 from school and put them through apprenticeships.

Mr Stoddart—Involving the schools is one way of trying to fight the lack of interest in manufacturing.

CHAIR—Are you seeing a change in the last few years? There has been a huge increase in the number of kids starting traineeships and apprenticeships while they are still at school. I do not recall the figures but they have doubled, tripled or quadrupled. The growth in the area is quite extraordinary just in the last few years. Perhaps it has not come through as yet.

Mr Gillman—We have not noticed it, but one of the things that was on top of that list of seven was enhancing the image. We had to get really back to the teachers at school and tell them it is not smokestacks and so on. Industry has got some great facilities.

Mr Stoddart—We have to compete with IT. The stability of employment in our industry is something we can sell. We do not have the peaks and troughs that some of the IT employees would experience. In 43 years we have had only 10 redundancies. It does not happen because we have such a broad cross-section of industries that we work in. It is like a multilegged stool: you cut off one leg and it still stands. So you have continuity and that is something we should be

selling more as an advantage in employment. There is a moderate amount of overtime and a good steady income in manufacturing.

Ms GRIERSON—I just point out that the Newcastle University engineering department has an excellent CD and package, which every school was given a copy of, in terms of making manufacturing more attractive and the engineering industry basically more attractive to young people. They complement that with a practical hands-on program they run throughout the region. But it is taking those sort of initiatives to really keep the interest in that industry going.

Mr Stoddart—Historically, we have had an attitude of training our own people, and by doing that we do not suffer the lack of skills. Trying to retain the people is the challenge, though. That is where R&D comes in. The product development area is the sexy area of what we do and it is interesting to people. There is a lot of new technology that we can use to do that, so there is great interest.

CHAIR—Yes. I think in the last few years the public attack on the so-called old economy was totally unwarranted. As you said earlier, you need to be out there saying it is not old, it is actually smart and surviving, while the so-called new economy is going through the dipper. Good. Thank you again for your valuable contribution to the inquiry. We really appreciate it. Thank you for coming down.

[12.13 p.m.]

GOLDSMITH, Mr Mark, Partner, Gilbert and Tobin

GREEN, Mr Andrew, Chief Executive, Australian Venture Capital Association Ltd

CHAIR—Welcome. Do you have any comments to make on the capacity in which you appear?

Mr Goldsmith—I appear here as an adviser to the Australian Venture Capital Association.

CHAIR—I would like to point out to you that, while this committee does not swear in witnesses, the proceedings here today are legal proceedings of the parliament and warrant the same respect as proceedings in the House. Deliberately misleading the committee may be regarded as contempt of the parliament. The committee prefers that all evidence to be given in public, but should you at any stage wish to give evidence in private—any confidential matters that you would like to provide to the committee but which are not for the public record—you may ask to do so and the committee will give consideration to your request. I now invite you to make an opening statement before we move to questions.

Mr LINDSAY—Could I first just ask Mark about the firm that he works with: is it a solicitors or an accountancy firm?

Mr Goldsmith—It is a legal firm.

Mr Green—Mark is a tax partner who was previously at KPMG; he is now a tax partner at Gilbert and Tobin. For the last 18 months Mark has been advising us on the venture capital limited partnership submission to government, which the government has adopted and which will give us a world's best practice investment vehicle for venture capital when legislation is passed.

Mr LINDSAY—That is the federal government?

Mr Green—Yes, the federal government. Venture capital drives research and development, and that is a fact which is shown by the OECD and by research in the United States. A very comprehensive survey of research and development in the United States by DRI-WEFA shows that venture capital backed companies spent almost three times as much on research and development as all public companies in the United States between 1980 and 2000. Those figures appear on page 16 of our submission to the committee. Therefore, the central philosophy of our submission is that if we can enhance the flow of capital into venture capital, then there will be more capital available for the creation of early stage and expansion companies in Australia, which will then drive private sector R&D.

We have put forward three recommendations, and Mark Goldsmith will talk about a fourth. I have a paper covering that fourth recommendation. The three recommendations we have put forward are summarised in our conclusion on page 19. The first is that we can build on the

courageous venture capital limited partnership reforms and facilitate the flow of capital into the venture capital industry by extending tax exemption to all non-resident investors who own less than 10 per cent of a venture capital limited partnership. It is a discrimination against the venture capital industry and private sector research and development that someone living in the Cayman Islands can own 10 per cent of BHP and make a billion dollars profit within 12 months, they can liquidate that and take all the proceeds back to the Cayman Islands tax free. They cannot do that with respect to unlisted Australian companies. That is a serious discrimination against privately backed companies, which are the drivers of R&D, and we need to focus on getting that fixed. We think that the venture capital limited partnership reform measures go a long way to remedying that in that they look at providing tax exemption to residents from a number of countries but, importantly, for example, Singapore will not be included in that list. We have representatives of the government of Singapore wanting to invest in Australian venture capital firms and they are being denied that, and they will continue to be denied that.

The second point that I would like to touch upon is that executive option schemes for managers of early stage companies are really capital extenders, and scarce capital could be deployed into R&D if it did not have to be made available in paying salaries to executives. It is even more important than that in attracting back to Australia high-powered people who are asked to make considerable sacrifices in terms of salary, and the current way in which we tax options is not in step with world's best practice. If we were really going to address this issue, we would propose to very simply deem that options be taxed as a capital gain in the hands of the managers of these early stage companies. It is very simple: there is no tax up front, as there currently is, so you give the people incentive to spring out of bed in the morning and go and create great companies. If they succeed, then they share the spoils with the investors. I think that situation as it exists is the single biggest barrier to commercialisation of intellectual property coming out of our research institutions. In our submission, we have put forward some case studies showing how there are some ramifications which are completely unintended when it comes to rollover of options. Because of the integrity issues, we would suggest that there be a ring fence to investees of venture capital limited partnerships, so they are eligible investees. It would not be available to public companies. We think it should be a targeted piece of legislation.

Thirdly, we would suggest that expats wanting to return home, especially post September 11, be given an opportunity to have concessional taxation, given that they will be coming back here and taking a big cut in salary compared to what they would currently be earning overseas. We think those three measures will boost the capital flowing into venture backed companies and will make it possible for venture backed companies to attract capital. You will not get capital for companies unless you have good CEOs, and often you have to go overseas to get good CEOs. To get those people you have to give them the right remuneration, give them a small tax break and tax their options as capital gains. There is a fourth issue that we thought we should bring to your attention. It concerns a targeted R&D concession. Mark will talk on this point.

Mr Goldsmith—Andrew is talking about establishing a connection between building venture capital and R&D. The more capital that flows into venture capital, the more money that will be invested in R&D. That is borne out by the figures that are shown in the submission. Over and above that, rather than just focusing on building venture capital, given the forum here is to focus specifically on R&D, our thought was that, in addition, there could be some form of targeted measure directed towards the venture capital sector to promote research and development activities. At the moment, one of the problems in the private sector, particularly in the fledgling

small company area, is their ability to raise capital. Their inability to raise capital means that they have difficulty funding their operations, which means that the last thing on their mind is putting money into R&D.

I recognise that the government has moved to address some of the problems with the existing R&D concession in the sense that it was generating losses and those early stage companies could not utilise the losses by giving tax refunds. What it is not addressing, though, is the fundamental issue associated with trying to attract capital into early stage companies. We are proposing that, rather than targeting the concession at the R&D entity itself, the concession be available to the investor. To outline that a bit more specifically: an investor investing in an SME—and it would be limited to what we would call relatively early stage venture companies—would get the R&D concession based upon the capital they contributed to that company. Of course, that would then automatically raise concerns as to whether or not that money will be appropriately used for R&D. To address that, we would suggest that a pool needs to be established by the underlying company which could be monitored by AusIndustry, as is currently the place, and that pool would need to be spent on eligible R&D activities.

What we are suggesting is not a quantum leap from what we have at the moment. The existing rigour around ensuring that the R&D concession does not blow out essentially remains, but the concession is moved from the company to the investor, and the investor's money that has contributed to the early stage company must be earmarked and must be spent on R&D activities. That is the gist of the concept. In that way, it is providing the tax incentive at the level of the investor and it is the company that is trying to attract the capital to conduct its R&D activities. We would suggest that is a more targeted approach, which has a specific connection between venture capital and R&D activities.

Mr Green—Mr Chairman, I have here a note outlining that initial suggestion.

CHAIR—Thank you for that. I would just like to pick up on that last point. What you are suggesting is that, currently, where a company that would not be accessing the R&D tax concession because they are not actually making any money, so they are not paying tax—

Mr Goldsmith—You have to be a bit careful about that, because if you are a small company there is a tax refund entitlement. But what I am saying is that the fact that the company gets a refund of tax attributable to its R&D activities does not necessarily encourage it to spend the money on R&D when it cannot raise the capital in the first place. When talking about these smaller companies, we are referring to companies that are struggling to raise any form of capital just to maintain their operations, let alone specifically maintaining R&D. So the fact that a concession is available to the company itself is not going to be an enticement to an investor to put the money into that company; that is the gist of the philosophy.

CHAIR—It would only be the investor that gets the concession, not both.

Mr Goldsmith—Correct.

CHAIR—So the company that does not make any money would not be eligible, then, for the refund.

Mr Goldsmith—Correct. We are not trying to get a double bite. All we are doing is moving it from the company level to the investor level, and the concept would be that they would get a tax deduction to the extent of their capital contribution to the company. Also, you could ask, ‘What happens when they sell the shares in the company?’ They would not have any costs for those shares for tax purposes so they would pay tax on the first dollar they got back, because they had effectively obtained a tax deduction for their capital contribution.

CHAIR—Would you see that as encouraging greater investment by venture capitalists, whoever, in R&D?

Mr Goldsmith—Absolutely.

CHAIR—Do you think this is something that would encourage even some of the other financial institutions, such as banks et cetera, to effectively invest—although they would use the word ‘loan’—in those sort of businesses as well?

Mr Goldsmith—What I do see, perhaps—and, Andrew, please chip in—is that you may have particular funds established. I think it is important that in discussing this we need to think beyond just individuals, because there would be some conduit vehicle in between. So you could have an R&D fund established, for instance, and investors would get a tax deduction for their contributions at the R&D rate. If they got a return of any form, even if it was a return of the money that they originally put in, that would be taxed as a capital gain to them.

Mr ANTHONY SMITH—That did not happen with syndication, did it? I know that is slightly different—I am not really comparing apples with apples.

Mr Goldsmith—What we also tried to do in this very brief paper was address that, because I know syndication was very problematic. Part of the problem with syndication—as I understand it, and I am not an expert in that area—was also the ability to buy technology as opposed to actually incurring the R&D expenditure directly.

Mr ANTHONY SMITH—So lots of people got big tax deductions and ended up getting family tax benefits, avoiding super surcharges and all sorts of things.

Mr Goldsmith—For things that could be, let us say, inflated values on core technology—we are not talking about that. What we are talking about is: picture a small company which is trying to develop something in the technology sector, some computer related technology, and is struggling to get capital. It would qualify itself for the existing R&D concession but the benefit of that R&D concession is not helping them to raise capital.

Mr LINDSAY—I just have a point for clarification. You said that if the investor gets the tax incentive, the company does not.

Mr Goldsmith—Correct.

Mr LINDSAY—But where the company has no difficulty raising its funding, it should still get the benefit.

Mr Goldsmith—Correct. It should be optional.

Mr LINDSAY—Okay; I just wanted to clarify that.

CHAIR—I would like to ask about some of the other points that you raised. Mr Green, you mentioned some changes that have taken place which were positive but Singapore was not on the list. Could you just clarify that aspect and who is on the list?

Mr Green—Let me say first that the venture capital limited partnership reforms are a profound step forward in our ability as a nation to attract global capital. We are enormously appreciative of the effort that the government has gone to to consult with us and put in place a regime which we think reflects world's best practice. Rather than be seen to be in any way critical of those reforms, we would like to use the opportunity to build upon those reforms. We have signed off, in terms of the consultation process, on that reform package and we are now moving down the track.

There still exists the fact that you can invest tax free in a listed Australian public company but if you are a foreigner you cannot invest tax free in a venture capital opportunity here. To us that seems quite wrong. There is no logic in discriminating against a very small, struggling sector of the economy when we are trying to encourage capital to flow into it. In building upon the venture capital limited partnership reforms it will be important to accept that anyone can invest in venture capital limited partnerships from abroad, irrespective of their domicile—whether they be in a tax haven or not. If we cannot get that far, surely we can at least have a process whereby countries like Singapore can be added to the list.

CHAIR—Who is on the list now?

Mr Goldsmith—There are six core countries: the US, the UK, Germany, France, Japan and Canada. The other seven are the Netherlands, New Zealand, Norway, Sweden, Taiwan, Italy and Finland.

Mr Green—We want to place on the record again our gratitude to the government for its courageous move to implement world's best practice. We now say, 'Let's move forward and address the issues which have not been satisfactorily resolved,' but we do not wish to be in any way critical of the process because it has been a great outcome. I think that in the fullness of time people will look back on this as turning point in our ability to live up to our dream to be a clever country.

Mr LINDSAY—An earlier witness said that they did not like venture capitalists because 'they want half the farm'. What is your response to that?

Mr Green—My response is that the few Australian institutions that have the courage to support us and support the Australian industry—as opposed to giving \$100 million allocation, for example, to a major US fund for investment offshore—are very vigilant institutional investors who do not give venture capitalists free rein.

Raising funds is incredibly difficult. In this environment it takes two years to raise funds. It is little understood by entrepreneurs that the people running these firms have been through exactly the same excruciatingly painful process the entrepreneurs are going through in raising the funds.

It is very hard to raise institutional capital and when you do raise it there are very tight restrictions on how you can invest it. There is a common misconception that venture capital is the panacea for everything and is available for all stages of the creation of businesses, and that is not the case. Because of the time involved in the requirement that a venture capitalist needs to have a hands-on involvement with the company and needs to have a board position in a typical fund of, say, \$125 million, you may only commit to 20 deals during the life of that fund. You are going to be turning down lots of people. So there is a critical minimum amount that you can commit to a fund.

With regard to whether venture capitalists are avaricious or greedy, we would say that the venture capital limited partnership reforms hopefully will enable us to bring in more competition from abroad and have a freer marketplace. Capital is a global commodity. At the end of the day, if Australian entrepreneurs think that the venture capitalists are being greedy, then there is nothing to stop them hopping on a plane and going to the Valley and trying to raise funds.

Mr LINDSAY—Okay. What is the attraction of your members to this industry? You are saying it is not that you want to make a big dollar—is that right?

Mr Green—No, I am not saying that it is not to make a big dollar. It must be the dream of every venture capitalist to create stellar companies like ResMed and Cochlear, both of which have been venture backed. It must be their objective. That is why people get into it—the thrill of creating successful companies.

Mr LINDSAY—Do your members ever make an investment in public institutions?

Mr Green—There are limited circumstances where there may be public to private transactions. Just Jeans was privatised recently by one of our members, Catalyst, which was brought down from the exchange and is now an unlisted company. It is being driven hard and it has been growing quite aggressively.

Mr LINDSAY—I had in mind a university which has an idea, and then a venture capitalist partners with a university to do something. Is that possible?

Mr Green—Absolutely.

Mr LINDSAY—Has it been happening?

Mr Green—The government's pre-seed funds, of which there are four, are a great initiative in helping develop that opportunity in that the pre-seed funds are required to take intellectual property arising out of our teaching and research institutions, such as universities and so on.

Mr LINDSAY—I have some tax questions, Mark, which you might like to answer. In your first point in your summary on page 19 you talk about an exemption for any non-resident investor owning less than 10 per cent of a VCLP. What was the reason for choosing 10 per cent?

Mr Goldsmith—Because if you own less than 10 per cent of a listed company there is no Australian capital gains tax, so the logic is, as Andrew was saying earlier, that one can own 9.9

per cent of BHP and make a billion dollar profit and there is no Australian tax, which is the irony of it, but on the other hand—

Mr LINDSAY—Okay; that explains it. In relation to your second point, the treatment of executive options, how will the government protect itself, if it implements this, against those who might come along and say, ‘Well, this is a good scheme; we will avoid some tax’?

Mr Goldsmith—In other words, repackaging what is essentially salary into options. That is a fair enough comment. I think it needs to have some integrity measures around it.

Mr Green—Could I come in here and say that one of the things that we have put in place with the venture capital limited partnership regime is what we call an eligible investee criteria list. We would think that it could be appropriately ring-fenced by saying that the treatment of options as capital in the hands of the managers is only available if you are an eligible investee—in other words, if you are a bioscience start-up or you are doing IT or whatever. The venture capital limited partnerships themselves will be tightly managed by AusIndustry and they will have to go through an approval process and, in order for them to maintain their status, they will need to do certain things. They could only invest in certain types of investees.

Mr LINDSAY—Earlier one of you talked about the blow-out in the R&D tax incentive as far as the government is concerned, as far as its budget is concerned. Do you have any advice for the committee as to whether or not that matters? Should the tax incentive just simply be opened because of the benefits it might bring back to the government through different mechanisms?

Mr Goldsmith—I am not sure that we actually did say that. There was some reference to maybe unintended consequences arising out of syndications. I think if a concession is put in place that has a particular policy objective and that objective is not being fulfilled or is being exploited then the government is justified in closing that down. That is at one end of the spectrum. The other part of the question is: if it is achieving its goals and it is genuine R&D investment should you have some type of cap on it? It is incumbent on the government to monitor how the budget is maintained and if they have allocated a certain amount for R&D and it starts to blow out—

Mr LINDSAY—The point I was making was that if it blows out, if it is uncapped, doesn’t that money come back to the government anyway because—

Mr Goldsmith—Through the economic benefits that flow from it?

Mr LINDSAY—Yes.

CHAIR—But tax concessions are uncapped.

Mr LINDSAY—That was not evidence—

CHAIR—There is the 125 per cent and the 175 per cent. At no point does government say, ‘Sorry, you can’t claim that tax concession because we have already paid out X billions of dollars in tax concessions.’ The tax concession part of it cannot be capped.

Mr Goldsmith—No, but you can look futuristically and make a type of change to policy. But you are quite right—it is like depreciation deductions or anything else.

Mr LINDSAY—I have misunderstood that then.

CHAIR—The programs are capped. R&D Start programs and those sorts of things are capped.

Mr Goldsmith—Which is the payout, as opposed to the tax benefit driven off the back of the tax deduction. That is not capped; that is open-ended.

CHAIR—The only way that you can change that is by changing the concession.

Mr LINDSAY—I understand.

Mr Green—There could be situations where people would artificially contrive something and construe it to be R&D when it was not. So, in answer to your question, there may be circumstances where there would be no residual long-term benefit to the economy, hence the need for some type of integrity measures around the policy.

Ms GRIERSON—At the moment, if I came to you and wanted to invest in AVCAL, would I have any knowledge of a company I was supporting or a venture I was supporting?

Mr Green—There are several ways in which Australians can invest in venture capital. The first is through wholesale superannuation commitments from their super funds. The Commonwealth government super fund is a major supporter of the private equity industry in Australia. Another way that an individual could do it would be through an unlisted trust, of which there are some around. That is a common—

Ms GRIERSON—Would you manage my money in that way? Would AVCAL have that hands-on involvement?

Mr Green—AVCAL is the industry body. One of our members would manage that. For example, JB Were raised \$145 million about two years ago and they have an extensive range of investments across agribusiness, bioscience and IT. It is a true early stage fund. That money was committed two years ago and it is sequentially drawn down as required and you would get a distribution of capital as those investments are liquidated. The time horizon on that is five to 10 years; it is not a short-term thing. Therefore, it is often the case that for Australians to participate in venture capital it is best done through their super funds where they can manage the time horizon better because they have got people coming into the super fund all the time and people leaving it.

Ms GRIERSON—I just got my super statement so it is probably looking much better as an option! Do I get any spin-off from royalties or IP if I invest in venture capital?

Mr Green—Again, if you were to be a private investor you would normally get a capital return. It is common practice around the world for venture capital to be viewed as an investment

in the creation of capital gains, hence the common practice that gains arising be treated as capital in the hands of the investors.

Ms GRIERSON—A lot of your submission is about supporting SMEs. Do you have any idea what proportion of venture capital is currently directed towards SMEs rather than larger companies?

Mr Green—A reasonably small amount.

Ms GRIERSON—That is what I would have thought.

Mr Green—We do not have figures. Whilst we would like to think it was more, we can point to the fact that at critical times companies like Cochlear and ResMed were the recipients of venture capital and, but for that, they probably would not exist today. It is important that, as a nation, we recognise that the industry has come a long way in a short time, but that we have not reached our goal and life's never-ending goals. We have advanced a long way and we are doing a pretty reasonable job. There are always things we can do better and we do not resile from that. If you look at the performance of the Australian industry over the last five years—where it has come from and where it is now—it has shown considerable restraint at a time of reckless investment by some of its international peers in the US and Europe, where billions of dollars have been lost and not only in IT related companies. We have had nothing like that reckless investment in Australia. We should be cognisant that the industry is in good shape, it has come a long way, it is doing well and we can always improve. When we get the venture capital limited partnership reforms through parliament we expect that we will have a world's best platform from which to move forward, and that international managers will come here and bring their skills.

Ms GRIERSON—I would like to come back to that later. Another part of your submission is very much about the lack of management skills and about attracting CEOs from overseas. That does not always sit comfortably with me, in terms of the amount of money going into management schools. Is there a training and development deficit in this country in terms of management? Why are you saying that we have to look overseas for people who can globalise and commercialise more successfully? Why are we not skilled in that?

Mr Green—It is simply a question of not having the experience. Lots of people can start a business from the smell of an oily rag, but it requires a completely different skills set to grow that business from 20 people to 40 people and then go on to take it international. Unless you have that experience, then more often than not, as the person who invented the technology and started the company, you will not be the appropriate person to take it global.

Ms GRIERSON—What do you think is government's role in that?

Mr Green—Government's role is to acknowledge that the problem exists and to encourage the provision of courses aimed at bridging that skills gap. It is also to put in place an environment where people who are suitably qualified from overseas can come back here and slot into those early-stage companies. As you rightly say, there is a proliferation of courses around Australia already and we would not seek that they be duplicated, but there may be opportunities for high-powered courses. For example, we run a foundation course in venture capital once a year. We have it limited to 30 people. It is taught by practitioners—people who

have the skills and are financially literate. That course has been highly successful in upskilling the existing managers. A two-day intensive management-skills workshop for people who are already CEOs, explaining to them the skills that they do not have and telling them what they do not know about business, would be a worthwhile addition to a government program.

Ms GRIERSON—You suggested that world-class R&D teams or talented individuals be granted a flat rate of 25 per cent tax for the first three years after their return. Would that be for management or for researchers?

Mr Green—I am cognisant of the Federation Fellowship Scheme, which I think is a terrific initiative. It is an example of government being responsive to what industry has asked for. That is a wonderful scheme. I think that scheme probably covers the academic and research side. Our idea was more for people coming back into private industry. It should not, however, be restricted to the place of work. The person may go into a CRC. Would you classify a CEO of a CRC as a researcher or as a CEO of a venture backed company? It is perhaps a measure which requires a little further exploration but which overall, in terms of marketing Australia's attractiveness to expats who are abroad, would be a wonderful thing to encourage them to return home.

Ms GRIERSON—Yes, and I think it would have to be done very well because there are inherent risks of not attracting who you are really targeting—

Mr Green—The right people.

Ms GRIERSON—like a business migration program. The other thing—and I do not think people realise this—is that if you have been away for over two years you have to qualify again for the basic entitlements, such as Medicare et cetera, in this country. I think that is quite a marked disincentive to people. That is perhaps an area government should look at as well. I am really concerned about your fourth suggestion of a concession for an investor because we do not need a tax minimisation scheme that does not result in economic growth in terms of this country's export potential, our skill potential or our actual success of ventures. What you have said looks to me very much like a managed fund in some way or a trust or some sort of situation. I would rather people who have excess cash put it in those sorts of schemes that benefit the country. Making sure that is linked to actual success and economic growth just by giving it to AusIndustry is perhaps not the way to do it. Have you got any other thoughts on how you would link that sort of sinking fund to success and to quality?

Mr Green—I think if we accept that a high level of R&D is desirable in terms of producing long-term economic prosperity, any way in which we can encourage money flowing into R&D needs to be good. Yesterday I was with an angel investor who over the last two years has built up a group of 30 individual angels in Sydney primarily and along the eastern seaboard. He said that it has got to the point where high net worth individual angel investors are losing interest. They are a very important part of seeding early stage ventures. It is often that you will go to family and friends. You may be a researcher. You may only want \$100,000. It is often those people who are the first port of call for early stage companies.

Ms GRIERSON—And I might get the thrill of success if I were supporting that start-up company that you talked about—a very important factor.

Mr Green—Yes, that is correct.

Ms GRIERSON—But if I give it to a fund I am not seeing much.

Mr Green—What Mark was saying was that high net worth investors such as these 30 people would be interested if they could get a tax deduction for that capital committed to an early stage company, so instead of the tax concession being locked up in a company make it available to the investor in that company. Is that something that you would be happy with?

Ms GRIERSON—No, but it helps.

Mr Goldsmith—Certain investors will want to invest directly and therefore take an active role and feel a part of it. Other investors may not have the time.

Ms GRIERSON—That is right. But you have to find a way to accommodate both, haven't you?

Mr Goldsmith—That is correct. I am not saying one versus the other. I am saying that the approach would need to be flexible enough to allow investors that did not want to be actively involved to be able to go through a fund and leave that responsibility to someone that might have the skill and the time to participate in those small fledgling companies.

Ms GRIERSON—And what if, as the chairman suggested, all financial institutions and lenders wanted that facility for R&D loans as well? How do we then keep it directed to quality? How do we stop that running out?

Mr Goldsmith—You cannot pick the winners, can you? What we are saying is that there is ample rigour around the existing R&D concession. It has been going for years and it has been—

Ms GRIERSON—It is supposedly competitive, yes.

Mr Goldsmith—Yes, and it has been tightened up where there have been weaknesses in it so that it is appropriately targeted. What we are saying is that the money that is being raised has to be used to qualify for the existing R&D concession. I do not think you can go the next step and say someone needs to be there evaluating the project and determining whether or not that money is being properly deployed, or picking winners, because that is the essence of it: no-one knows who is going to pick the winner.

Ms GRIERSON—No, the concessions should be for the risk, and there is always a risk.

Mr Goldsmith—That is correct.

Mr ANTHONY SMITH—I want to change tack a little bit. We have talked a lot about tax treatment of various R&D schemes and vehicles and where the tax benefit ought to lie. One of the things I want to ask you about, given the breadth of the issues that you cover, is your point about recruiting the best talent. You make a number of suggestions about flat rates of tax for a specified period of time when people return from overseas. You have got a quote highlighted from a professor who said that when they returned to Australia they took a 40 per cent pay cut.

This is near the section in your submission on the Monash University report that cites a couple of reasons for that disparity—one being the weak dollar, which is fairly obvious in itself, and the other, just as obvious, being geographic isolation. But one thing that is not mentioned is income tax rates. Could you talk about those relative to some of the other countries? Clearly that would be on the list; it might not be one or two.

Mr Goldsmith—The income tax rates are higher, whilst there is the top marginal tax rate, when you add state taxes and everything else in, in the US, and I have seen the OECD surveys where they say that Australia is relatively comparable, but the problem in our tax rates is that the top marginal tax rate kicks in at such a low level—

Mr ANTHONY SMITH—It is the threshold.

Mr Goldsmith—It is the threshold issue. People are aghast at the tax rates. It is fair to say that we see people departing Australia to go overseas and make money in three years on an after tax basis that would take them maybe six to eight years to make here. It just gives them that step up. There is what everyone talks about as the ‘brain drain’, but there is also the fact that once people establish themselves overseas their psyche changes and they find it quite punitive to come back to a tax regime where they are paying much higher tax rates. I think that is a very fair comment.

Mr ANTHONY SMITH—That threshold is \$60,000 now for the top rate, but it was planned to be \$75,000, or was it \$70,000?

Mr Goldsmith—I thought it was \$70,000, but you might be right.

Mr ANTHONY SMITH—So you would say it has had a negative effect to the extent that it exists.

Mr Goldsmith—Yes, and whether it is \$60,000 or \$70,000 it is still way out of kilter—

Mr Green—I think it was \$75,000.

Mr Goldsmith—Okay, \$75,000. It is still way out of kilter if you compare it with the US.

CHAIR—I would like to ask about the amount of money in venture capital. I remember reading a report fairly recently that showed some figures—unfortunately I cannot recall the actual figures; you might be able to help me with them—which showed quite a substantial increase in the amount of money available through venture capital for the 2000-01 financial year compared to previous years. The report predicted a fair drop back for 2001-02, or was it 2002-03—still above what it was prior to the big increase but a drop back. Could you help me with those figures and make some comment on why those changes have taken place?

Mr Green—My estimation of the amount of capital flowing into the industry in the year to June 2001 is about \$1.5 billion. Rough figures show that for the year to June 2002 it is about \$700 million—so it has halved. To some extent people have stopped fundraising pending the introduction of the venture capital limited partnership legislation as they will be marketing to global players who have indicated that they will come and invest in those new funds. To some extent it is cyclical.

There is not a lot of capital available for investment at the moment. There are not enough early-stage managers. We still need to bring in more skilled managers, bring in more capital and teach the skills set to more people. We could probably have five to 10 times the number of early-stage venture capital managers in Australia who could proactively go out and talk to people at CSIRO, the universities and research institutions and forage for the opportunities which will become the great companies of tomorrow.

CHAIR—Do you think the changes will bring that back up again for 2002-03?

Mr Green—I think there should be an uptake. It just depends on how quickly the legislation is passed. Having said that, the time required to raise a fund, instead of being 12 months, is now pushing out to 18 months or two years. In some cases it may take two years for people to raise their fund. If they have not done it after that then they will not succeed and they walk away from it.

CHAIR—Was there any reason in particular why it went to \$1.5 billion in 2000-01? I think the year before it was only a couple of hundred million—is that right?

Mr Green—The reason it jumped is that the returns which the funds were generating were largely driven by the high public markets and therefore the institutions saw that the way to generate those returns was to get into venture capital. That is a bit of a response to the public markets. In reality, venture capital is a long-term asset class and the institutions who historically have done well out of it have made long-term commitments in the order of five to 10 per cent of their portfolio. They invest each year; they do not try to pick a vintage year in which to start their investing, do it for one year and then get out.

CHAIR—Thank you for that evidence and for your submission. The secretary reminded me that we are treating your submission as confidential. Presumably you are happy to raise publicly the things that you have raised today.

Mr Green—Yes.

CHAIR—As I said earlier on, you could have given evidence in private if necessary. Are you happy for the supplementary submission, which you have given us today, to be made public?

Mr Green—Yes.

Resolved (on motion by **Mr Anthony Smith**):

That the supplementary submission entitled 'Improving the level of business funded research and development in Australia', presented by the Australian Venture Capital Association, be received as evidence to the committee's inquiry into business commitment to research and development in Australia.

Committee adjourned at 1.04 p.m.