RIO TINTO

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Science and Innovation Study,
Productivity Commission
PO Box 80
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Dear Commissioners,

AUSTRALIAN PRODUCTIVITY COMMISSION REVIEW OF PUBLIC SUPPORT FOR SCIENCE AND INNOVATION

Rio Tinto is a major investor in science and innovation in Australia, particularly in the area of R&D investment, and as such, gains considerable benefit from the leverage of Government support in this area. Science and innovation are core to Rio Tinto's business, and Rio Tinto continues to be an active participant in a number of the initiatives supported by the Australian Government under Backing Australia's Ability. As well as active involvement in nine CRCs, Rio Tinto continues to leverage the R&D tax concession, and it is this type of direct support that is fundamental to Rio Tinto's ongoing R&D presence in Australia.

Like much of Australia's commodity based industry, Rio Tinto competes on a global basis. Continuous improvement of our operations is critical to their long term survival, and science and innovation play an important role in this. In the current climate, improvements and step changes in productivity and operational efficiency have to go hand in hand with improvements in energy usage, responses to the impact of climate change, and a commitment to Sustainable Development. Over the next decade, Rio Tinto sees investment in R&D in these areas playing a key role in maintaining the competitiveness of the Australian mining industry in the face of increasing global competition and decreasing margins. It is likely that many of the economic benefits of this investment will flow to Australia and specifically to areas of regional Australia.

Rio Tinto (and previously CRA) has a long history of investment in R&D in Australia and continues to maintain significant facilities in Melbourne, Brisbane and Perth. The majority of projects undertaken in these facilities engage with Government funded research institutions or leverage Government support in some way. Government support has played an important role in encouraging Rio Tinto R&D projects in Australia, and the Government-Business model developed for the Rio Tinto Foundation for a Sustainable Minerals Industry has been a particularly good example (a copy of the RTFSMI 2005 Annual Report is attached).

Public sector support has been particularly important for major projects involving step change or transformational technology such as Rio Tinto Aluminium's drained cathode cell and Rio Tinto Iron Ore's HIsmelt project, one of the largest single R&D projects undertaken by industry in Australia. Projects like these have the potential to revolutionise industry and result in considerable economic benefits, as well as environmental and social benefits derived from intrinsically safer and more sustainable production processes.

Rio Tinto leverages public support for science and innovation in three key areas. Firstly, the continued supply of high quality graduates and post-graduates is critical to our operations. These people are well versed in R&D, open to new ideas, and used to looking internationally for developments in their field. They help position a company at the leading edge in the face of increasing competition and decreasing long term returns, a particular issue in any commodity business. Even fast followers rely on a core of people with the knowledge and networks to know where to find that leading edge and to engage the skills to move towards it. These are the people that drive short term competitiveness and long term growth in industry.

A second important outcome of public support is a world-class science base. It is this base that provides the multiple critical paths that can lead to a single technological breakthrough. It is generally not economic for one company to undertake basic research across the multitude of areas that might be needed to support a single development such as HIsmelt or the drained cathode cell. In both of these cases it has been necessary to understand the intricate details of chemical reactions and physical processes, with extensive use of modelling, analytical and problem solving techniques. Industry relies on a strong base of relevant fundamental R&D, and the physical infrastructure to support it, in order to be able to unravel the specific details at the heart of any step change technology. The various collaborative arrangements between industry and the public sector can help by spreading the technical risk, but there has to be public investment to provide the continuity in basic science and world-class capabilities.

Thirdly, the commercial risk of proving up any new process at scale is massive. Development costs for HIsmelt and the drained cathode cells run into hundreds of millions of dollars. Any innovative process of this complexity still runs a very real chance of failing at the point of final scale up and commercialisation. Indeed the lesson of history is that only one in ten major new processes makes it through this stage. Reducing the commercialisation risk is therefore of paramount concern in seeing Australia take on more step-change innovations with the concomitant greater returns when they are successful. The lesson of hot briquetted iron in the Pilbara and three acid leach plants for nickel in Western Australia is testament to the high failure rate in this area. All of these represented new processes and new technology that ultimately failed economically. There are very few large companies prepared to support this level of risk without some external leverage.

As mentioned previously, perhaps the most significant lever for Rio Tinto remains the R&D tax concession. This programme is mirrored by similar programmes in other countries and is an important factor in Rio Tinto's decision regarding the scope and location of R&D projects. When the R&D taxation incentive was reduced from 150% to 125%, the attractiveness of Australia as a base for R&D, relative to the UK and USA, diminished.

Rio Tinto also notes that commercialisation of new technologies is still an area of considerable challenge. Existing Government support, such as COMET and START, appears to be targeted towards new company formation in the high risk SME sector. Consideration should be given to encouraging increased investment in early stage technologies by larger companies.

One area where innovative solutions and successful commercialisation of new technologies have the potential to make a significant impact is in addressing the challenge of climate change. Rio Tinto sees a widening gap between the imperatives of climate change and the cost and readiness of technological solutions. Over the next decade, public and private investment in areas such as clean coal technology, renewable energy, and low carbon alternatives have the potential to make a significant impact in this area. Public support, through initiatives such as the Low Emissions Technology Development Fund, and vibrant and focussed research programs such as through the CRC for Greenhouse Gas Technologies, the CRC for Coal in Sustainable Development and CSIRO, combined with various business collaboration programmes and international alliances, will be key to the achievement of successful innovation in this area.

Finally, an important indirect benefit of strong and visible Government support for science and innovation is the broad public confidence and engagement with science that results. This should not be underestimated as an enabler for the establishment and growth of science and technology based industry.

While there are always opportunities for improvement, Rio Tinto commends the Government for its continuing investment in Australian science and innovation, and in particular the significant progress and investment made under Backing Australia's Ability. While we would be supportive of any changes that simplified the process for engagement with the innovation system, we would be concerned at any suggestion that the current level of public investment in this area should be reduced.

Yours sincerely,