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The Manager
Small Business Entities & Industry Concessions Unit
The Treasury
Langton Crescent
PARKES ACT 2600

UTS Public

26 July 2018

Dear Sir,

Re: Consultation on the draft Treasury Laws Amendment (Research and Development Incentive) Bill 2018 and Explanatory Materials

Thank you for providing the opportunity to comment on the changes to the R&D tax incentive announced in the 2018-19 Federal Budget.

The purpose of our submission is to provide comments on the proposed changes to the extent that they relate to the minerals exploration sector, which is our current research focus.

Our comments are outlined in the attachment.

If you have any queries in relation to our submission, please contact me on (02) 9514 3565 or Andrew.Ferguson@uts.edu.au.

Yours sincerely,

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"Better Targeting the Research and Development Tax Incentive" – Feedback on Draft Proposals

Our research

Our research examines the impact of the refundable R&D tax offset on Australian mining companies since eligibility for the tax offset was expanded in 2011.

From an economic theory perspective, we present below a brief summary of the arguments in favour of the refundable R&D tax offset:

- A feature of R&D investment is the degree of uncertainty associated with its output, as scientific research is inherently risky. It can therefore be difficult to model the expected returns for R&D projects due to small probabilities of high future payoffs. As a result, small, new innovative companies face a high cost of external capital when funding R&D projects.
- R&D projects can take several years between conception and completion. Small, innovative companies often endure losses for a number of years before becoming profitable. For a single project company with no other taxable income, the resulting carried forward tax losses may never be used if the project fails. The refundable R&D tax offset allows the company to give up some of its unused tax losses in exchange for a cash refund, providing a source of financing that is less costly than external (equity) capital.
- The government's tax claim on the returns from risky R&D investments resembles a portfolio of call options. Because the government can consolidate risk within the collected sum of tax revenues on the returns from many investments by many different companies, the refundable R&D tax offset enables small, innovative companies to share risk with the government.

Our research examines these assertions in a setting where accumulated losses are prevalent, namely, Australian mining exploration entities (MEEs). A large number of MEEs undertake projects with a significant amount of geological, technical and commercial risk. R&D plays a critical supporting role in improving the odds of success for MEEs in two ways. Firstly, by bringing about intellectual property acquisition around mineral deposits such as processing options, certain sub-economic deposits may become economically viable. Secondly, successful R&D can accelerate the development of viable projects that are routinely subject to long development life cycles.

Examining a sample of MEEs listed on the Australian Stock Exchange (ASX) (using publicly available data), we find preliminary evidence suggesting that the refundable R&D tax offset has been successful in its objective of making cash refunds available to MEEs. The number of MEEs receiving the refundable tax offset increased significantly after eligibility for the tax offset was expanded in 2011, when the annual R&D expenditure threshold was raised to $100 million and the offset rate increased to 45%. Prior to 1 July 2011, eligible R&D expenditure had been capped at $2 million per year and the rate of the offset was 30%. 54 ASX listed MEEs received the refundable offset in the year ended 30 June 2011; by the year ended 30 June 2015, this had increased to 147 ASX listed MEEs. The average cash refund received increased as well, from $318,383 in 2011 to $969,765 in 2015. For context, the average cash balance of MEEs in our sample was just $2.15 million, illustrating the critical importance of the R&D tax incentive as a source of financing for MEEs. We are currently undertaking further research in relation to the

effectiveness of the refundable R&D tax offset and would be pleased to share our findings with you in due course.

Comments on the Draft Proposals

Our comments in relation to the specific proposals contained in the draft Bill and Explanatory Materials are set out below. The focus of our submission is on the proposals that relate to the refundable R&D tax offset for small mining R&D entities, as this is our current research area.

Whilst we would normally not support the introduction of 'caps' on refundable R&D tax offsets for small R&D entities as they can create market imperfections, the introduction of an annual $4 million cap on refundable R&D tax offsets for small R&D entities may have benefits in the form of reducing the likelihood of inefficient investment decisions. For example, R&D entities may continue R&D activities when they are no longer economically viable (overinvestment). We also acknowledge that some practitioners have expressed the view that an uncapped refund may be too generous, as it does not place sufficient pressure on start-up companies to make decisions regarding the commercial viability of the funded R&D activities.[1]

As it pertains to MEEs, the $4 million cap should not adversely affect the ability of MEEs to fund their R&D activities. Since eligibility for the refundable R&D tax offset was expanded in 2011, the average refund received by MEEs in our sample has been approximately $1.04 million. Less than 5% of MEEs in our sample received annual refunds of more than $4 million.

We support the proposal to allow unused R&D tax offsets to be carried forward as a non-refundable tax offset (current practice).

Other aspects of the proposals

One of the reasons given for reforming the R&D tax incentive was the need to enhance the fiscal affordability of the incentive, as the June 2018 consultation paper cites a net gain to the budget of $2.4 billion in fiscal balance terms over the forward estimates period.

We would suggest that a proper evaluation of the effectiveness of the incentive should consider the potential high payoffs should research be successful, as well as the positive externalities created by successful R&D.

Consider a basic example. An MEE might spend $6 million over a period of 4-6 years on eligible R&D activities relating to experimental processing work conducted in order to evaluate the economic potential of a silver deposit. The MEE's activities are relatively research-intensive during the early stages of the mine life cycle; it spends $30 million on exploration activities (which are not eligible for the R&D tax offset) during the same period. The latest resource estimate implies that the deposit contains 42 million ounces of silver, which has an estimated 'in-ground' value of $900 million based on the spot silver price on 30 June 2017. The company has not yet completed a feasibility study for the project. However, given a ballpark estimate of $50 million in capital expenditure, an estimated mine life of 5 years and estimates of cash costs of production, a project Net Present Value (NPV) can be produced.[2] If we further assume the project will conservatively earn a life of mine net profit of $150 million, at the current company tax rate of 30%, this would result in additional tax revenues of $45 million. While the expected

[1] Gale, K. (2018). "The New R&D Tax Incentive: Refundable R&D Tax Offset – Some Value Trimming And A Fascinating Change", Michael Johnson & Associates, 10 May 2018, available online: http://mjassociates.com.au/the-new-rd-tax-incentive-refundable-rd-tax-offset-some-value-trimming-and-a-fascinating-change/ (accessed 17 July 2018).

[2] Using industry heuristics in discount rate assumptions.

future tax revenues would be discounted at a rate reflective of the high inherent risk associated with building and operating a mine, the potential gain to the Treasury would nonetheless dwarf the government's outlay on R&D tax refunds provided to the MEE.

There would be other positive externalities from the development of a deposit such as this, including increased taxation revenues for Treasury from employment in financing, engineering, manufacturing, construction, transport and logistics activities, as well as from the mining company itself. Such benefits are understandably difficult to take into account when preparing Budget estimates of the impact of changes to fiscal policy.

We also note that Australia will need a vibrant MEE sector more than ever in the future. For example, Western Australia (WA) has extensive reserves of energy metals, such as lithium, vanadium, rare earths, cobalt, and nickel, with future demand for these expected to expand rapidly due to the advent of electric vehicles. For example, the Lithium Ion battery market is estimated to be worth $56.52 billion per annum to the Australian economy by 2024/2025[3]. Global competition to supply the emerging energy metals market will be significant, with government incentives frequently used to attract high value industries. Ensuring Australia's R&D incentives are competitive with similar incentives offered in other countries will be critical if Australia is to develop its energy metals opportunities. Further, Australia's current R&D spend of 2.1% of GDP lags behind other countries such as Israel (4.3%), Korea (4.2%), Sweden (3.3%) , Japan (3.3%) and the US (2.8%)[4].

Other proposals

We do not have any specific policy recommendations regarding the merits of the proposed R&D intensity measure, as this is not the focus of our research.

However, we make the following general observations:

- Practitioners have repeatedly pointed out the problems associated with introducing a measure of R&D intensity.[5] Because a company's non-refundable R&D tax offset claim can only be worked out at the end of the year, when its total expenditure is known, this is likely to add uncertainty to the R&D tax offset calculation.
- If the proposed changes are enacted, this would be the second time the government has cut the rate of the incentive since the program was expanded in 2011. In 2016, the rate of the refundable tax offset was cut from 45% to 43.5% and the non-refundable tax offset from 40% to 38.5%. Further cuts would risk creating uncertainty about the level of incentives that will be provided in the future. An emerging body of research suggests that government policy uncertainty negatively affects asset prices.[6]

[3] Regional Development Australia. (2018). "Lithium Valley: Establishing the Case for Energy Metals and Battery Manufacturing in Western Australia". May 2018, p.8.
[4] OECD Research and Development Statistics (2018), available online: http://www.oecd.org/sti/rds (accessed 23 July 2018).
[5] Gale, K. (2018). "The New R&D Tax Incentive: Non-Refundable R&D Tax Offset – The Winners (an elite few) and The Losers (everyone else)", Michael Johnson & Associates, 9 May 2018, available online: http://mjassociates.com.au/the-new-rd-tax-incentive-non-refundable-rd-tax-offset-the-winners-an-elite-few-and-the-losers-everyone-else/ (accessed 17 July 2018).
[6] Ferguson, A. and Lam, P. (2016). "Government policy uncertainty and stock prices: The case of Australia's uranium industry". *Energy Economics,* Vol. 60, pp.97-111.