

Financial Services for
Managing Risk: Climate
Change and Carbon
Trading – Submission by
Rio Tinto to the Garnaut
Climate Change Review

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EXECUTIVE SUMMARY AND KEY MESSAGES

Rio Tinto has developed and worked to climate change programs for the past 14 years. Through its work it has a keen understanding of the threats and opportunities that climate change and resultant policy will have on its operations, the regions in which it operates and its business. The potential for disruption is large particularly in the emissions intensive resources sector with pass through impacts in the associated services and manufacturing sectors. Accordingly, it welcomes leadership from the Australian government on the issue and the opportunity to make this submission to the Garnaut review.

Rio Tinto believes that a comprehensive climate policy is essential for Australia including:

- a price on carbon to establish a market approach to targeted emissions reductions;
- a fully funded and accelerated national low emissions technology strategy consistent with the importance of the climate imperative;
- international cooperation in development and implementation of policy and low emissions technologies;
- increasing understanding of climate science and actively adapting to climate impacts; and
- transitional policies that are realistic yet enable Australia to do its fair share, maintain competitiveness and avoid double adjustment (ie adjustment that in the short term exceeds what is appropriate in the long term).

Climate Risk Management and Insurance – Rio Tinto has well established programs to assess the risks to its businesses and to adjust its risk control practices. Accordingly, it believes that individuals and firms are primarily responsible for identifying and managing their own risks. As an integral part of climate policy, Rio Tinto believes that the government will need to more explicitly consider what risks arising from changes in the physical climate it is prepared to face and under what circumstances. Clearly, a case can be made for government provision of aid in emergencies. However, the government needs to take account of the fact that by being seen to provide such aid in every emergency it blunts the incentive of private individuals to take full account of the risks to which they are exposed. Rio Tinto supports stronger use of nationally coordinated planning controls and engineering standards to mitigate risks rather than relying excessively on post event recovery provisions.

Effective carbon trading markets - In establishing the new domestic emissions trading regime an important consideration is whether existing or new environmental or taxation policies are complementary to the new trading scheme or whether such policies conflict with trading. The key questions here are whether inconsistent or redundant state government policies are brought into line with the new federal government regime and whether all federal policies are complementary to the scheme. A concern is how to ensure the federal government's announced renewable energy target is a useful adjunct to the domestic emissions trading scheme (ETS). In Rio Tinto's view, unnecessary costs could be imposed on the economy by the combination of the two policies for a given environmental outcome. In other words, it is important to avoid a situation where an ETS in combination with a renewables target costs more but achieves the same as a domestic ETS alone.

Rio Tinto is also concerned that without accepted and realistically priced low emissions energy technology, trading markets will not function as intended. Work for Rio Tinto, using IPCC data, suggests that Australia's medium term abatement cost curve is quite steep and at reasonable carbon prices abatement will fall short of emissions reduction targets currently being discussed within the community. For this reason Rio Tinto considers that Australia needs a fully funded national low emissions technology strategy intimately linked internationally, as the technology challenge is well beyond Australia to tackle in isolation.

Rio Tinto therefore suggests that more thinking needs to be undertaken on the renewables target. One option that could be explored is to develop in parallel to Mandatory Renewable Energy Target (MRET) a mandatory low emissions technology target (MLET) for non-renewables projects (eg geosequestration) and to incorporate both into the back end of the national low emissions technology strategy - with strict guidance that both should be used to accelerate deployment mechanisms to build learning and bring costs down more rapidly than the market would otherwise deliver.

Permit allocation and the permit market - Rio Tinto believes that it is crucial that the domestic ETS does not have an adverse impact on the export competitiveness of the aluminium, alumina, pig iron and coal industries or growth in those industries for as long as Australia's major trading partners do not have equivalent mitigation schemes in place. As it appears that it may be many years before Australia's developing country trading partners have equivalent schemes in place, Rio Tinto believes that there needs to be detailed consultation with industry when designing any allocation method aimed at maintaining the competitiveness of Australia's trade exposed industries.

Rio Tinto is particularly concerned with the quality of available data bases necessary for government, in consultation with industry, to make sector and firm level allocation decisions, and the transparency and assumptions used in modelling to set overall ETS scheme parameters.

Careful design of the emissions trading scheme will be crucial to its performance. Rio Tinto believes that caps should be set to deliver progressively escalating carbon prices and to allow society to build acceptance of and confidence in low emissions technologies while accumulating the necessary low emissions technology construction and operational skills and supporting infrastructure. Rio Tinto also believes that banking provisions and the ability to forward trade are important features of an ETS although the establishment of borrowing provisions will be problematic because governments are typically concerned about the risk of firms defaulting. This concern was clearly indicated during the Kyoto Protocol negotiations where proposed borrowing provisions for Article 17 trading were comprehensively rejected. This of course does not mean that limited borrowing provisions could not be built into the domestic scheme but it does illustrate the hurdles that would need to be overcome in designing such provisions.

1. INTRODUCTION AND GENERAL ISSUES

The Rio Tinto Group wishes to play a constructive role in its contributions to Government initiatives on climate change. It has already provided submissions to the Prime Minister's Task Group and participated in consultations organised by the Task Group and the NETS Secretariat. Rio Tinto values the opportunity to contribute to Australia's policy formulation processes including the work being undertaken by Professor Garnaut on behalf of the Australian Government.

The Group is vitally interested in ETS design as its Australian operations are large (2007 production exceeded \$US15 billion), value adding, export focused, rapidly expanding and often energy intensive.

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- transitional policies that are realistic yet enable Australia to do its fair share and maintain competitiveness and avoid double adjustment (ie adjustment that in the short term exceeds what is appropriate in the long term).

In responding to Issues Paper 2 Rio Tinto has organised its submission as follows. In responding to the 'questions for consideration' as set out in the Issues Paper we have grouped our responses under four headings: climate risk management and insurance issues; effective carbon trading markets; permit allocation and the permit market; and positioning Australia. We have chosen to deal with insurance and risk management under a single heading because, in our view, the two issues are closely inter-connected.

2. CLIMATE RISK MANAGEMENT AND INSURANCE

QUESTIONS FOR CONSIDERATION

Does the insurance industry have the capacity to provide adequate and affordable insurance products in a future of climate change?

Are there any market failures associated with the provision of insurance that are specifically related to climate change risk?

What are the key insurance gaps relating to climate change?

What kinds of innovative products could the insurance industry provide to deal with increased weather related risk associated with climate change?

What are the appropriate burden of risk sharing responsibilities between Government, individuals and the insurance industry?

Is the insurance industry likely to provide an adequate range of insurance products in the absence of government intervention?

More generally, is there a useful role for government in providing a mandatory, regulatory insurance against climate change risks, or is the general prudential supervisory role of government enough?

Due to the long term nature of many of Rio Tinto's assets, the physical risk associated with climate change poses real risks (both threats and opportunities) to the Rio Tinto Group. Since 2002 Rio Tinto has been working towards an improved understanding of these issues, and is currently using data from state-of-the-art high resolution climate model runs to assess climate risk at a number of high priority businesses. Through this active focus on climate risk management, Rio Tinto will be in a position to quantify future commercial climate exposures to our respective audiences that may have a valid interest in our insurance and financial risk placements.

The Issues Paper correctly notes one important role for government in identifying and attempting to correct market failure in risk markets. There are two important sets of issues here. The first is the role that government can play in the provision of risk exposure and mitigation information and the interaction of that new information with other policy instruments, and the second is concerned with facilitating the operation of as broad a range of risk markets as is practical and cost effective.

Information provision and coordination across levels of government- Rio Tinto believes there is a role for government in making available within Australia additional risk information and providing greater risk policy coordination between the layers of Australian government. It is generally recognised that there may be market failures in the provision of information because private individuals will under-invest in the provision of goods (in this case information goods) for which there are net benefits to society as a whole but that cannot be directly appropriated by private investors. This argument is akin to that on the general under-provision of research and development by the private sector in the sense that successful research leads to new information even if it is ultimately designed to lead to the development of new processes or products. The arguments for government involvement in research and information provision are well articulated in Alston and Pardey (1996).

While some attention has been paid to the role of information provision in the literature (see for example Titenberg and Wheeler, 1998), there is much less analysis available on the interaction of information provision with other policies. For example, will better information complement or compete with a carbon price signal? Under reasonably general conditions, Petrakis, Sartzetakis and Xepapadeas (2005) have found that a policy approach that combines information provision and taxation of an environmental externality is far superior than a taxation alone approach in terms of welfare. This result arises because uniform taxation alone levies a heavier than optimal burden on informed consumers while the remainder free ride on the voluntary actions of their better informed counterparts. Of course key assumptions here are that the information being provided by government is useful, that it is cost effectively provided and that it is adopted.

Although not explicit in the key questions, the Issues Paper has raised the question of whether the government has a role in building resilience to climate change by introducing planning and engineering standards and other regulations such as in urban planning. This question raises both general and specific issues. First, it is well documented that command and control approaches are less efficient than so-called market based instruments such as taxes (see for example Fisher *et al.* 1995). Second, while recognising that governments will always choose a portfolio of policy instruments (even if such a choice is not warranted in theory), it is crucial to attempt to minimise the conflicts that may arise both between policies and between jurisdictions. This is particularly crucial in the case of urban planning because in the Australian context overall climate change policies will be led from the federal level while urban planning is typically done at the state and local government levels. This highlights the importance of attempting to better coordinate policy at all levels of government.

Facilitating a broad range of risk markets - The Issues Paper correctly notes that 'Government's role should be primarily focussed on assisting individuals make informed decisions and on ensuring there are no impediments or restrictions to accessing private insurance'. However, it will not be possible to insure all risks in the private market simply because many markets will not exist. This raises the issue of governments' potential role in creating or otherwise compensating for key missing markets. This area of public policy is littered with disasters. A typical example is the government provision of crop insurance in the United States. Generally the private market is not prepared to write crop insurance except in the case of very specific products, such as those available for hail damage. The reasons for this general lack of availability of such private insurance are that crop failures caused by drought for example often cover very large areas of a country and individual losses are highly positively correlated. In addition, the problems of adverse selection and moral hazard are prevalent with insurance of this type. For a discussion of these issues see US GAO (2005, 2006).

The lessons from the difficulties experienced with government provision of crop insurance are pertinent to answering the question as to whether governments can be successful in the provision of insurance products designed to mitigate the risks of climate change. The adverse effects of climate change are likely to be spread over wide areas and highly correlated in their consequences. Any financial subsidies offered by governments are likely to delay adjustment and lead inevitably to the government bearing even larger costs in the form of emergency management and rescue packages.

In the case of the experience in the United States US GAO (2007) observed that many private insurance companies are now incorporating near term elements of climate change into their risk management. The consequence has been that as insurers attempt to reduce their own exposure to catastrophic risk they have transferred some of this risk to policy holders and some to the public sector. There is no fixed rule that can be used to determine what share of risk should be borne by the private individual, those who facilitate the pooling of risks between individuals, namely insurance companies, and the government. Each individual has different financial circumstances and a different tolerance of risk while different insurance companies and re-insurers will form their own opinions about the actuarial risk that they face.

The Rio Tinto Group believes that individuals and firms are primarily responsible for identifying and managing their own risks and that there is a substantial experience of managing the risks of weather related events able to be drawn upon to address climate change related risks. Given however, the change that could arise over the next 25 plus years the government will need to more explicitly consider what risks it is prepared to face and under what circumstances. Clearly, a case can be made for government provision of aid in emergencies. However, the government needs to take account of the fact that by being seen to provide such aid in every emergency it blunts the incentive of private individuals to take full account of the risks to which they are exposed.

There is a potential gap in insurance products that climate policy is creating – that is the risk associated with geosequestration. Management of long term liability for the sequestered carbon dioxide is currently a significant barrier to deployment of the technology. Until there is significant experience in geosequestration, the insurance industry will be unlikely to accept the risk or will price itself out of the market. Ultimate liability for sequestered carbon dioxide should return to the state; however the insurance industry will have a role especially during operations near-term post closure. Governments may need to intervene to ensure suitable insurance products are available for the early deployment of geosequestration – the market should develop with experience and allow the government to back out with time.

3. EFFECTIVE CARBON TRADING MARKETS

QUESTIONS FOR CONSIDERATION

Are there any institutional inhibitors to the emergence of an Australian ETS?

There are key institutions and rules of operation that must be established before an emissions trading scheme can function effectively. These include establishing a means to monitor and verify trades, establishing registries and agreeing on clearing and settlement services. Given that Australia already has well developed financial markets the Rio Tinto Group perceives that there will be no institutional impediments to the establishment of an effective domestic emissions trading scheme once the necessary federal legislation has been enacted and the required new institutions established as long as sufficient time is provided for and specific issues and specific concerns of emitters, sellers and the financial services sector are all considered.

An important consideration is whether existing or new environmental or taxation policies are complementary to the domestic emissions trading scheme or whether they conflict with trading. The key questions are whether inconsistent or redundant state government policies are brought into line with the new federal government regime and whether all federal policies are complementary to the scheme. One concern is to ensure the federal government's announced renewable energy target, to be pursued by trading RECs under the existing MRET's policy, is a fully useful adjunct to the domestic emissions trading scheme. In Rio Tinto's view, unnecessary costs will be imposed on the economy by the combination of the two policies for a given environmental outcome. In other words, a trading scheme in combination with a renewables energy target may result in a higher cost than a domestic emissions trading scheme alone.

Rio Tinto is also aware of concerns that high MRET targets could delay development and deployment work on non-renewables low emissions technologies that international modelling indicates as vital for lowering the cost of abatement. Rio Tinto is concerned that without accepted and realistically priced low emissions energy technology, trading markets will not function as intended. Work for Rio Tinto, using IPCC data, suggests that Australia's medium term abatement cost curve is quite steep and at reasonable carbon prices abatement will fall well short of emissions reduction targets currently being discussed within the community. For this reason Rio Tinto considers that Australia needs a fully funded national low emissions technology strategy intimately linked internationally, as the technology challenge is well beyond Australia to tackle in isolation.

Rio Tinto believes that a carbon price will not be sufficiently high to deploy low emissions technologies such as carbon capture and storage, wind and solar at the rate and scale necessary to achieve meaningful reductions in emissions without complementary policies. The role of the complementary policies should be to support pre commercial deployment in order to accelerate technology development and reduction in the cost through learning by doing, building economies of scale and competition between technology suppliers. This enables more rapid commercial deployment than would otherwise be delivered by the market.

Rio Tinto therefore suggests that more thinking needs to be undertaken on the renewables target. One option that could be explored is to develop in parallel to MRET a mandatory low emissions technology target (MLET) for non-renewables projects (eg geosequestration) and to incorporate both into the back end of the national low emissions technology strategy - with strict guidance that both should be used to accelerate deployment mechanisms to build learning and bring costs down more rapidly than the market would otherwise deliver.

The real challenge of successfully executing major technology programs is well illustrated by the recent controversy between the FutureGen Alliance and the US Department of Energy over the Department's proposal to restructure funding for the project. Despite some recent reports to the contrary, it seems very clear that constraining the build up of greenhouse gas concentrations in the atmosphere will require the deployment of technologies such as carbon capture and storage on a very large scale. In Rio Tinto's view the development and deployment of such technologies will not occur without a comprehensive research and development policy coupled with other policies such as emissions trading.

Rio Tinto believes that it will be essential to establish strong governance arrangements around the domestic ETS. In this respect the regulatory body should be at arms length from government and the registry facility and clearing house should be world class.

4. PERMIT ALLOCATION AND THE PERMIT MARKET

QUESTIONS FOR CONSIDERATION

Is permit price realisation and discovery best facilitated through the use of auctioning under an ETS?

To what extent, and on what basis, might it be desirable that permits are not allocated via an auction system?

Rio Tinto supports a system of free allocation of some allowances for transition purposes and auctioning of the remaining permits. Specific issues pertain to trade-exposed, emission-intensive industries. In particular, Rio Tinto believes it is crucial the domestic ETS does not have an adverse impact on the export competitiveness of the aluminium, alumina, pig iron, and coal industries or growth in those industries as long as Australia's major trading partners do not have equivalent mitigation schemes in place. Free allocation to key sectors would help preserve competitiveness

Also, iron ore is a globally traded commodity and, although the sector is relatively less energy intensive than other mining and metal industries, it has huge growth prospects which are vital to regional and national development. Australia's international standing in the global seaborne-traded market for iron ore will be challenged by its competitors with Brazilian, Indian, Russian and South African operations unless a concession is established that is not tied to high levels of emissions intensity.

As it appears that it may be many years before Australia's developing country trading partners have equivalent schemes in place, Rio Tinto believes there needs to be detailed consultation with industry when designing any allocation method aimed at maintaining the competitiveness of trade exposed emissions intensive industries. Recent announcements regarding the proposed allocation process under the EU ETS reflects these concerns and endorses the need to protect TEEIs from adverse impacts.

Advantages of auctions include that they: a) facilitate price discovery for the value of a newly created good whose price is uncertain; b) minimise transactions costs; c) promote economic efficiency by ensuring that permits are allocated to their highest valued uses; d) promote transparency and equity; and e) generate revenue with which to compensate some members of society and fund technology RD&D.

Disadvantages of auctions include: a) they increase adjustment pressures by requiring the outright purchase of all permits (adjustment pressures will be particularly high for those firms with high emissions intensities and those with a significant proportion of energy in total production costs); b) if capital markets are imperfect and/or firms are risk averse, the need for upfront financing may affect pricing behaviour and market structure; c) auctioning of permits results in a net transfer of wealth from greenhouse gas emitters to the government, which may or may not be used wisely.

Rio Tinto is concerned that the design of any auction system is effective and efficient. Initially there will be issues of price discovery, data imperfection and opportunities for speculation that could impact price and market volatility. These need to be guarded against. However, as the market matures some of the start-up rules associated with auction will be able to be removed.

The rationale behind free administrative allocation of permits is to prevent the excessive penalisation of past investment decisions, taken prior to the introduction of government policy and to maintain international competitiveness. While such allocations can buffer firms against higher costs of production and lower demand for their product/s, constraints on total emissions mean that there are unlikely to be enough permits to offset all adjustment costs. Thus, economic adjustment will still be necessary if emissions are to be constrained.

The direct emissions of a particular entity are not necessarily a good indicator of potential loss or adjustment burden under an emissions trading regime. Some emitters have greater ability to absorb or pass through costs associated with emissions trading than others. There are wealth and equity considerations to factor into allocation decisions (to share out the burden) if one firm is able to pass through the cost of the scheme to downstream consumers whereas another is not.

Allocations direct to households on a per citizen basis may satisfy some notion of equity, but will be less likely to facilitate smooth adjustment through compensation for the impacts of the scheme. This method could avert the need to decide on more complex forms of administrative allocation. There have been some suggestions that households may hoard permits, thereby driving up the permit price and increasing costs for energy intensive businesses. This is unlikely to be a practical problem given that an increasing permit price would increase the incentive to sell.

Fixed price sales will be less economically efficient than auctions because permits are unlikely to be allocated to their highest valued uses as would occur with an auction mechanism.

Whether permits are administratively allocated or auctioned will have primarily only equity rather than efficiency implications in terms of first round effects. However, auctioning generates a revenue base that administrative allocation does not, and the potential for revenue recycling with funds raised at auction potentially has considerable efficiency implications.

Credit for early action is beneficial in the sense that it may encourage emitters to abate early. One often quoted benefit of credit for early action is that it avoids the potential gaming inherent under grandfathered allocations to increase near term emissions and hence obtain a higher allocation. However, in reality there is not a lot of room for near term ramping of emissions given that most assets have fixed capacity and are presumably operating at economically efficient levels. In addition, the time to the introduction of the domestic scheme is now so short as to make it impractical for firms to be engaged in significant gaming behaviour over emissions baselines.

QUESTIONS FOR CONSIDERATION

What features of an ETS might impede the emergence of forward markets?

Is it possible to have strong and efficient forward markets with restrictions on the use of permits, such as limited banking and borrowing?

The deepest and most efficient forward markets would develop in circumstances where governments set a long term carbon budget with the stated intent of not varying from that level. However, in reality, in the face of uncertainty about the nature and extent of climate change and varying political commitments, governments are far more likely to set interim targets even if they announce longer term 'aspirational' targets. Even the language of the United Nations Framework Convention on Climate Change and the nature of the international negotiations encourage governments to think in terms of regular target updating. While the Convention language contains no specific timeframes (other than those associated with stages in negotiations); it contains language which refers to 'periodically update', 'regularly update' etc which led to the adoption of a 5-year commitment period under the Kyoto Protocol.

While Rio Tinto sees strong merit in a carbon budgeting approach it believes that government policy needs to be formulated in a way that is consistent with Australia's obligations under the Convention and the Kyoto Protocol and the practical reality imposed as a consequence of the international negotiations.

Banking and borrowing of allowances across trading periods (within constraints) should be allowed to improve market efficiency and allow flexibility to hedge against high compliance costs. Borrowing overcomes issues with misalignment between the economic cycle and acquittal periods, that is, firms may be caught short toward the end of an acquittal period in circumstances where there is unexpectedly strong economic growth. It is likely to be more environmentally effective than price safety valves.

The Rio Tinto Group's major focus will be on banking provisions. Rio Tinto believes that the establishment of borrowing provisions will be problematic because governments are typically concerned about the risk of firms defaulting. This concern was clearly indicated during the Kyoto Protocol negotiations where proposed borrowing provisions for Article 17 trading were comprehensively rejected. This of course does not mean that limited borrowing provisions could not be built into the domestic scheme but it does illustrate the hurdles that would need to be overcome in designing such provisions.

5. POSITIONING AUSTRALIA

QUESTIONS FOR CONSIDERATION

How can governments help facilitate Australia becoming a regional hub in the Asia-Pacific Carbon Markets?

Rio Tinto will likely participate in the market as an emitter, with obligations rather than as a financial services provider and hence has little to comment here. It does stress however, that the main aim of an emissions trading scheme should be to bring about the most cost competitive abatement that the market can provide. Focus in scheme design should remain on mitigation and not be overtaken by any secondary objectives including positioning Australia as a regional financial hub.

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