



Public Competition Assessment

8 November 2007

Rio Tinto plc - proposed acquisition of Alcan Inc

Introduction

1. On 3 October 2007, the Australian Competition and Consumer Commission (ACCC) announced that it would not intervene in the proposed acquisition of Alcan Inc by Rio Tinto plc (the **Proposed Acquisition**). The ACCC was of the view that the Proposed Acquisition would be unlikely to have the effect of substantially lessening competition in a market in contravention of section 50 of the *Trade Practices Act 1974* (the **Act**).
2. The ACCC formed its view on the basis of the information provided by the merger parties and information arising from its market inquiries. This Public Competition Assessment outlines the basis on which the ACCC reached its decision on the Proposed Acquisition, subject to confidentiality considerations.

Public Competition Assessment

3. To provide an enhanced level of transparency and procedural fairness in its decision making process, the ACCC issues a Public Competition Assessment for all transaction proposals where:
 - a merger is opposed;
 - a merger is subject to enforceable undertakings;
 - the merger parties seek such disclosure; or
 - a merger is approved but raises important issues that the ACCC considers should be made public.
4. This Public Competition Assessment has been issued because Rio Tinto plc's proposed acquisition of Alcan Inc is considered to raise issues of interest to the public.
5. By issuing Public Competition Assessments, the ACCC aims to provide the public with a better understanding of the ACCC's analysis of various markets and the associated merger and competition issues. It also alerts the public to the circumstances where the ACCC's assessment of the competition conditions in particular markets is changing, or likely to change, because of developments.

6. Each Public Competition Assessment is specific to the particular transaction under review by the ACCC. While some transaction proposals may involve the same or related markets, it should not be assumed that the analysis and decision outlined in one Public Competition Assessment will be conclusive of the ACCC's view in respect of other transaction proposals, as each matter will be considered on its own merits.
7. Many of the ACCC's decisions will involve consideration of both non-confidential and confidential information provided by the merger parties and market participants. In order to maintain the confidentiality of particular information, Public Competition Assessments do not contain any confidential information or its sources. While the ACCC aims to provide an appropriately detailed explanation of the basis for its decision, maintaining confidentiality will be the ACCC's paramount concern. Accordingly, a Public Competition Assessment may not definitively explain the analysis of all issues.

The parties

The acquirer - Rio Tinto

8. Rio Tinto plc (**Rio Tinto**) is an international mining group with a business in finding, mining and processing mineral resources. These include iron ore, copper, coal, aluminium, industrial minerals (borax, titanium, dioxide, salt), diamonds, gold and uranium. The relevant area of Rio Tinto's business for the purposes of the present matter is aluminium production.
9. Rio Tinto's aluminium assets located in Australia include:
 - a bauxite mine (Weipa) located on the western coast of Cape York Peninsula in Queensland. Rio Tinto also holds interests in undeveloped bauxite deposits in Western Australia;
 - the Yarwun refinery at Gladstone in Queensland, and a 38.6% interest in the Queensland Alumina Limited (**QAL**) refinery, also in Gladstone; and
 - an aluminium smelter at Bell Bay, Tasmania, and interests (around 59%) in the Boyne Island smelter in Queensland (also at Gladstone).

The target - Alcan

10. Alcan Inc (**Alcan**) is a global producer of bauxite, alumina and aluminium. Other activities include the production of specialty alumina, manufacturing of aluminium products, recycling and power generation.
11. Alcan has interests in 6 bauxite mines and deposits, 5 alumina refineries and 21 smelters globally. Its interests in Australia include:
 - a bauxite mine and alumina refinery at Gove in the Northern Territory;
 - a bauxite mining lease on the Cape York Peninsula in Queensland;
 - a 41.4% interest in the QAL refinery; and
 - a 51.5% interest in the Tomago aluminium smelter in New South Wales.

Other industry participants

12. Other participants involved in the production of alumina and aluminium in Australia include:
- *Alcoa* (and related entities), which either owns or has interests in:
 - the Huntly and Willowdale bauxite mines in Western Australia;
 - the Kwinana, Pinjarra and Wagerup refineries in Western Australia; and
 - the Point Henry and Portland smelters in Victoria.
 - *Worsley Alumina*, a joint venture between BHP Billiton, Japan Alumina Associates (Australia) Pty Ltd and Sojitz Alumina Pty Ltd, which operates the Boddington mine and associated alumina refinery and port facilities in Western Australia.
 - *Norsk Hydro*, a Norwegian company that in Australia operates the Kurri Kurri smelter in the Hunter region of New South Wales and owns an interest in the Tomago smelter.
 - *Gove Aluminium Finance*, controlled by CSR, which participates in aluminium smelting via an interest in the Tomago smelter in New South Wales.
 - *UC Rusal*, a Russian aluminium and alumina company which participates in alumina refining in Australia through its 20% share of QAL.
 - A number of minority shareholders in Australian smelters, including *CITIC*, *Marubeni*, *YKK Aluminium*, *Sumitomo* and *Ryowa*.

The proposed transaction

13. Rio Tinto made an all cash offer of US\$101 per common share for all of the outstanding shares in Alcan, valuing Alcan at US\$38.1 billion. The offer was recommended by the Alcan board.

Areas of overlap

14. The areas of overlap between the two parties are in relation to bauxite mining, alumina refining and aluminium smelting. The ACCC did not consider there to be an overlap in downstream production of aluminium products.

Timing

The following table outlines the timeline of key events in this matter.

Date	Event
19-Jul-2007	ACCC commenced review under the Merger Review Process Guidelines.
06-Aug-2007	Closing date for submissions from interested parties.
12-Sep-2007	ACCC requested further information from Rio Tinto in relation to the supply of bauxite and alumina.
03-Oct-2007	ACCC announced it would not oppose the Proposed Acquisition.

Market inquiries

15. The ACCC conducted market inquiries with a range of industry participants, including competitors, customers, industry bodies, other regulatory agencies (including international agencies) and other interested parties.

Market definition

16. In this matter the ACCC considered that the most relevant markets for the competition assessment were:
- Regional markets for the supply of bauxite;
 - A national market for the supply of smelter-grade alumina; and
 - National markets for the supply of aluminium in various forms.

Functional dimension of the markets

17. Production of aluminium essentially involves three steps:
- first, bauxite is mined and transported to a refinery;
 - at the refinery, the bauxite is refined into alumina, which is then transported to a smelter;
 - at the smelter, the alumina is smelted into primary aluminium.
18. The ACCC noted that the aluminium industry exhibits a high degree of vertical integration, both in terms of common ownership and often actual physical integration of facilities (often dedicated facilities, such as conveyor belts, link bauxite mines to refineries or link refineries to smelters).
19. The ACCC also had regard to the presence of several non-integrated entities, minority shareholders and the significant trade in bauxite, alumina and aluminium between these entities. Given this, the ACCC considered it was appropriate in this matter to distinguish functionally separate markets for:
- the supply of bauxite;

- the supply of alumina; and
- the supply of aluminium.

Geographic dimension of alumina market

20. In relation to alumina, the ACCC first considered whether the geographic scope of the market should be restricted to the east-coast of Australia. To assess whether west-coast supplies of alumina should be included in the market, the ACCC assessed whether alumina supplied from the west-coast would act as an effective alternative source of supply for east-coast alumina customers. The ACCC noted that significant quantities of alumina are already moved from the west-coast to the east-coast, particularly from Alcoa's Western Australian refineries to its Victorian smelter interests. After assessing information from market participants in relation to the cost of transporting alumina from the west-coast to east-coast customers, compared to the cost of transporting from east-coast refineries to east-coast smelters,¹ the ACCC considered that the geographic market for alumina extended to include all of Australia.
21. The ACCC then considered whether the alumina market was wider than a national market. In particular, the ACCC noted that some decisions by overseas competition agencies refer to a global market. Furthermore, the ACCC had regard to the pricing of alumina, which is often priced by reference to the London Metals Exchange (LME) price for aluminium.
22. Despite this, the ACCC considered that industry conditions in overseas jurisdictions are different to those in Australia. From the perspective of Australian customers for alumina, the competitive choices are likely to come from Australia. This is different to the perspective that overseas customers may have, for whom the competitive choices might involve potential supply from many different parts of the world.
23. The fact that Australia is a significant exporter of alumina was also critical to the ACCC's assessment. The ACCC considered that theoretically, in export industries, if there are many suppliers in Australia, then domestic customers will most likely enjoy the benefit of export parity pricing. That is, Australian alumina producers will sell domestically at a price equivalent to what they could receive by exporting. Therefore the transport costs for exporting will be a relevant consideration in analysing pricing for domestic customers.
24. In contrast, if there is a single supplier in Australia, that supplier would be likely to price at import parity; that is, they will sell domestically at just below the price that customers would pay to import (which includes the transport costs of importation).
25. In analysing the Proposed Acquisition the ACCC did not conclude that there was currently export parity pricing, but did consider that current domestic prices are below the relevant import parity prices.

¹ The ACCC also had regard to the possibility that approaches to domestic pricing could be different on the east-coast compared to the west-coast, due to different costs of exporting (as well as due to the different costs of domestic transportation).

26. The “SSNIP” test is sometimes used by the ACCC to assist analysis of the appropriate market definition. The test works by considering a hypothetical monopolist in a geographic area and then analysing whether the hypothetical monopolist could profitably make a small but significant non-transitory increase in price (a “SSNIP”). When applying the “SSNIP” test to determine whether the geographic market should be extended beyond Australia, the ACCC considered that a hypothetical single domestic producer would be able to profitably impose a small but significant non-transitory price increase above the current price. That is, because the hypothetical single domestic producer would not lose many customers after imposing the price increase, due to the gap between the current price and import parity prices. Therefore, the ACCC considered that the relevant market was restricted just to Australia. The ACCC took into consideration submissions which argued that the costs of exporting and importing have recently risen significantly due to very high demand for shipping capacity throughout the world.

Geographic dimension of aluminium market

27. The ACCC applied the same approach to aluminium that it applied to alumina. As with alumina, aluminium is an export-oriented industry, but with a significant number of domestic customers.
28. The ACCC noted that transport costs are lower for aluminium as a percentage of the value of the product, due the higher value of aluminium compared to alumina. Despite this, the ACCC considered that there is a domestic market for the supply of aluminium.
29. Even though the ACCC considered there to be a domestic market, in its competition assessment the ACCC had significant regard to the possibility of imports acting as an upper-constraint on domestic pricing.

Product dimension of alumina market

30. The ACCC noted the distinction between smelter (or metallurgical) grade alumina and chemical-grade alumina, and the different uses for each. Without taking a conclusive view, the ACCC considered that there were likely to be separate markets for smelter-grade alumina and chemical-grade alumina. The ACCC did not consider it necessary to reach a conclusive view on this issue for this matter, as market participants did not consider there to be any competition concerns in relation to chemical-grade alumina.

Product dimension of aluminium market

31. The ACCC noted that aluminium produced at smelters is referred to as ‘primary aluminium,’ and at the end of the smelting process it is cast into a particular form. Common forms of primary aluminium are:
- Ingot;

- Billet (also know as extrusion billet or log);
 - Slab; and
 - T-bar.
32. The ACCC noted the distinction between aluminium used for ‘remelt’ purposes (where the aluminium is melted and then cast into new forms), such as ingot and T-bar, and aluminium used for ‘extrusion’ purposes (where the aluminium is heated to a high temperature and then ‘shaped’ into new forms), such as extrusion billet.
33. Market inquiries indicated that there is little demand-side substitutability between aluminium used for remelt purposes and aluminium used for extrusion purposes. The ACCC did note the possibility that customers may invest in facilities to cast aluminium in the form required, but this possibility was considered uneconomic for the majority of customers. On the supply-side, the ACCC investigated the costs of switching capacity between the different forms of primary aluminium. Market inquiries indicated that the costs of switching were high and would involve sunk-investment in significant new capital equipment. Therefore the ACCC considered that supply-side substitution was limited.
34. The ACCC also had regard to whether primary and secondary aluminium (e.g., recycled aluminium) were in the same market. Market inquiries indicated that in some circumstances secondary aluminium was substitutable with primary aluminium, such as where it was of the same alloy or purity. However, for many uses there is no demand-side substitutability, and therefore the ACCC considered it unlikely that secondary aluminium would provide a significant constraint in the market. On the supply-side, secondary aluminium producers cannot easily switch to becoming primary aluminium producers, as it would involve very significant investment in a smelter.
35. The ACCC also considered whether different alloys or purities of aluminium were substitutable. Market inquiries indicated that differing alloys and purities had a reasonably high degree of supply-side substitutability (despite limited demand-side substitutability), suggesting that they should be considered to be in the same market. However, the ACCC recognised that for some types of aluminium there may be limited supply-side substitutability, such as aluminium with very high purity levels or with other very specialised attributes. This is because many smelters are not capable of producing such aluminium.
36. The ACCC took the view that there were likely to be separate markets for primary aluminium used for remelt purposes and primary aluminium used for extrusion purposes. It was not necessary for the ACCC to form a view in relation to whether there are different product markets for certain alloys and purities of aluminium, as the ACCC did not consider that the analysis would have altered the competition assessment.

Geographic and product dimension of bauxite market

37. The ACCC noted that bauxite is not fungible, as bauxites obtained from different locations exhibit different properties. Consequently refineries are tailored to process bauxite from a particular region so as to achieve the most efficient production of alumina. These considerations were relevant to the product and geographic dimension of the bauxite markets.
38. The ACCC also noted that some of the operating bauxite mines in Australia are physically integrated with a refinery via dedicated infrastructure, thus limiting the ability to sell bauxite to a different purchaser for processing in a different refinery. In particular, the ACCC took into consideration that existing Western Australian bauxite mines are not located on the coast, thereby limiting the ability to transport bauxite out of Western Australia.
39. Market inquiries also indicated that the relatively low value of bauxite made it generally uneconomic to transport it over long distances. As indicated, transport of bauxite from mine to refinery is often achieved via dedicated infrastructure, such as a conveyor belt or a dedicated shipping fleet, as a method of lowering transport costs.
40. Each of these factors indicated limited substitutability between bauxite from different geographic regions, suggesting regional markets for the supply of bauxite. Of particular relevance to consideration of the Proposed Acquisition was the Queensland bauxite market.

Competition Analysis

Bauxite

41. Operating bauxite mines in Australia are located in Western Australia, the Northern Territory and on the Cape York Peninsula. Certain companies also hold mining leases over areas of land that may be developed into mines.
42. As discussed above, the ACCC noted that bauxite obtained from different locations exhibits different properties, and that these properties impact upon the refining process. Refineries are typically tailored to process bauxite from a particular location so as to maximise the efficient production of alumina. Market inquiries indicated that refineries can sometimes be changed so as to be tailored to a different bauxite, but often this will involve significant sunk investment and it is not always possible. Key properties of bauxite include silica levels, bauxite grade, alumina content and the handling properties. Differences in these properties occur within bauxite obtained from different locations around the world, from different locations within Australia and from different locations within a region.

43. The Proposed Acquisition results in an aggregation of bauxite interests on the Cape York Peninsula in Queensland. That is, Rio Tinto's existing Weipa bauxite mine is adjacent to a mining lease held by Alcan (the **Ely/Ducie-Wenlock/Dulhunty lease**). The ACCC considered the possibility that the Proposed Acquisition would remove a potential supplier of bauxite in the Queensland bauxite market.
44. The ACCC had regard to the barriers to entry involved in establishing a bauxite mine. Appropriate sites for a bauxite mine are clearly limited. Further, establishing a mine involves significant infrastructure costs and regulatory approvals. In particular, the ACCC noted that grants of mining leases are often made subject to requirements for downstream investment; for example, bauxite mining leases granted by the Queensland Government often contain requirements for the lessee to build a refinery and process a quantity of the bauxite within the State.
45. The ACCC noted that Chinese aluminium company Chalco is conducting a feasibility study of the Aurukun lease on the Cape York Peninsula in Queensland, and Cape Alumina holds exploration permits or pending applications over land in Cape York.
46. The ACCC also had regard to the possibility of bauxite imports. Bauxite is prevalent in a number of locations around the world, but it is a relatively low value product. Transport costs therefore represent a very high percentage of the bauxite's value, thus limiting the incentives to transport it over long distances (such as from Africa or South America to Australia). Where bauxite must be transported, there is a preference for dedicated or long term arrangements to minimise transportation cost.
47. Transport costs from countries closer to Australia – such as Indonesia or India – are lower, though other factors may limit the viability of importing bauxite. These factors include the different bauxite properties, the difficulty in obtaining a large long-term contract, and the government or legal requirements of the exporting country (for example, only a small percentage of the bauxite may be available for export as the country may require the majority to be refined domestically). The ACCC also noted that in a number of cases bauxite mines in countries near to Australia were at early stages of development.
48. The ACCC investigated the competitive tension that Alcan's Ely/Ducie-Wenlock/Dulhunty lease would be likely to impose in the future with and without the Proposed Acquisition. The ACCC had regard to the existence of a bauxite mining exchange agreement with Rio Tinto, which involves Rio Tinto mining part of the lease on Alcan's behalf. The ACCC also had regard to Alcan's own requirements for bauxite into the future, and how this would affect its incentives to sell bauxite, as well as the role of Alcan's Gove refinery and its associated bauxite mine.
49. Taking all the relevant factors into account, the ACCC considered that the proposed acquisition would be unlikely to substantially lessen competition in the supply of bauxite in Queensland or any other regional bauxite market.

Alumina

50. The ownership and location of alumina refineries in Australia (pre-merger) was as follows:

Refinery	Owner	Location
Yarwun	Rio Tinto	Gladstone, Queensland
QAL	Rio Tinto, Alcan, Rusal	Gladstone, Queensland
Gove	Alcan	Gove, Northern Territory
Worsley	BHP, Japan Alumina Associates, Sojitz	15km west of Collie, Western Australia
Kwinana	Alcoa	Kwinana, Western Australia
Pinjarra	Alcoa	Pinjarra, Western Australia
Wagerup	Alcoa	Wagerup, Western Australia

51. In assessing competition issues in alumina, the ACCC had regard to the fact that a number of the refineries within Australia are joint venture arrangements involving multiple shareholders. These refineries are typically operated on a tolling basis whereby the shareholders are entitled to a percentage of the alumina produced in accordance with their financial investment.
52. The Proposed Acquisition results in consolidation of refinery ownership, with Rio Tinto acquiring Alcan's stake in the QAL refinery and Alcan's Gove refinery in the Northern Territory. The only east-coast alumina supplier not part of the merged entity will be Rusal, which has a 20% stake in QAL.
53. The ACCC noted the high degree of vertical integration between alumina refineries and aluminium smelters, and also the existence of long term contracts for the supply of alumina between some non-integrated purchasers and suppliers. However, the ACCC noted that there is still a market for alumina in Australia, since some alumina customers (particularly stakeholders in smelters) have continuing alumina requirements.
54. Market inquiries indicated that long term contracts often have regular periods of pricing review, such that prices are not necessarily fixed for the entire term of the contract. This means that even those customers with long term contracts can be adversely affected by a reduction in competition. However, the ACCC noted that post-merger there would remain a number of suitable benchmarks, both within Australia and internationally, for alumina pricing.
55. The ACCC focussed its competition analysis on the effects on east-coast alumina customers. The ACCC had regard to:
- The cost of transporting alumina from west-coast producers to east-coast customers and the likelihood of west-coast producers supplying east-coast customers;
 - The potential for Rusal to supply domestic customers with alumina;

- The potential for alumina customers to enter into swap arrangements to obtain alumina, thereby lowering transport costs;
- The possibility of trading companies supplying east-coast alumina customers; and
- The likelihood of Australian alumina producers diverting export-bound alumina into the domestic market, and the role of existing long-term export contracts.

56. Having regard to all of these factors, and the submissions from market participants, the ACCC concluded that the Proposed Acquisition is unlikely to lead to a substantial lessening of competition in the national market for alumina.

Aluminium

57. In assessing competition issues in aluminium, the ACCC had regard to the fact that a number of the smelters within Australia are joint venture arrangements involving multiple shareholders. These smelters are often operated on a tolling basis whereby the shareholders are entitled to a percentage of the aluminium produced in accordance with their financial investment.
58. The ACCC noted that aluminium is produced in different forms (such as ingot, billet, rolling slab) and that each Australian smelter produces output of differing forms.
59. Market inquiries indicated that the Proposed Acquisition would lead to increased concentration, particularly among suppliers of extrusion billet. The Australian market for the supply of extrusion billet was a focus of the ACCC investigation, since market inquiries indicated that there was less concern in relation to other forms of primary aluminium.
60. The ACCC noted that Australia is a significant exporter of aluminium, with around 70% of aluminium produced exported, and considered that diversion of some of this exported aluminium into the domestic market for extrusion billet could act as a constraint on price rises.
61. The ACCC noted that there are very high barriers to entry to establishing a new aluminium smelter, including significant sunk costs and access to a reliable long term supply of electricity and alumina.
62. The ACCC noted that imports are currently rare due to Australia's position as an exporter. However, the ACCC considered that imports would place a cap on any rises in the price of aluminium in Australia. The cost of transportation was investigated in detail by the ACCC, and particular regard was had to the fact that transporting aluminium in containers is extremely common world-wide and, because aluminium is a quite valuable product, the costs of transportation as a proportion of the value of the product are reasonably low.

63. Overall, the ACCC considered that the potential for other market players to increase supplies into the domestic market, along with the ultimate constraint of imports, would provide a constraint on the merged entity such that the Proposed Acquisition is unlikely to lead to a substantial lessening of competition in any primary aluminium markets.

Effect on the World Price for Aluminium and Alumina

64. The price of aluminium (and to a lesser extent alumina) is typically set by reference to the LME. Generally pricing formulas in contracts are set at the LME plus or minus various adjustments.
65. The above discussion relating to aluminium and alumina focussed on the possible effect of the merger on the adjustments for Australian customers (i.e. would the merged-entity increase the adjustment premiums or reduce adjustment discounts post-acquisition). However, the ACCC also considered whether the Proposed Acquisition would increase the underlying LME price that forms the basis of most supply contracts for aluminium (and to a lesser extent alumina). In particular, the ACCC noted that both Rio Tinto and Alcan have significant assets in the aluminium supply chain throughout the world. Overseas competition/antitrust regulators also considered this equivalent issue.
66. Due to the existence of a significant number of other large world-wide players in aluminium and alumina, the ACCC did not consider it likely that the Proposed Acquisition would increase the LME price. In particular, the ACCC noted competitive pressure provided by companies such as Rusal and Alcoa, and by Chinese producers.

Conclusion

67. On the basis of all of the above factors, the ACCC formed the view that the proposed acquisition of Alcan by Rio Tinto would not be likely to result in a substantial lessening of competition in contravention of section 50 of the Act in:
- Regional markets for the supply of bauxite;
 - A national market for the supply of smelter-grade alumina; or
 - National markets for the supply of aluminium in various forms.