

The Treasury

New Zealand Aluminium Smelters (NZAS) Information Release

September 2013

Release Document

www.treasury.govt.nz/publications/information-releases/nzas

Key to sections of the Official Information Act 1982 under which information has been withheld.

Certain information in this document has been withheld under one or more of the following sections of the Official Information Act, as applicable:

- [1] 9(2)(a) - to protect the privacy of natural persons, including deceased people
- [2] 9(2)(b)(ii) - to protect the commercial position of the person who supplied the information, or who is the subject of the information
- [3] 9(2)(f)(iv) - to maintain the current constitutional conventions protecting the confidentiality of advice tendered by ministers and officials
- [4] 9(2)(g)(i) - to maintain the effective conduct of public affairs through the free and frank expression of opinions
- [5] 9(2)(i) - to enable the Crown to carry out commercial activities without disadvantage or prejudice
- [6] 9(2)(j) - to enable the Crown to negotiate without disadvantage or prejudice
- [7] 9(2)(ba)(i) - to protect information which is subject to an obligation of confidence or which any person has been or could be compelled to provide under the authority of any enactment, where the making available of the information would be likely to prejudice the supply of similar information, or information from the same source, and it is in the public interest that such information should continue to be supplied
- [8] 9(2)(h) – to maintain professional legal privilege

Where information has been withheld, a numbered reference to the applicable section of the Official Information Act has been made, as listed above. For example, a [3] appearing where information has been withheld in a release document refers to section 9(2)(f)(iv).

In preparing this Information Release, the Treasury has considered the public interest considerations in section 9(1) of the Official Information Act.

Treasury Report: The economics of the NZ Aluminium Smelter

Date:	19 December 2012	Report No:	T2012/3275
--------------	------------------	-------------------	------------

Action Sought

	Action Sought	Deadline
Minister of Finance (Hon Bill English)	Note contents.	None
Associate Minister of Finance (Hon Steven Joyce)	Note contents.	None
Minister for State Owned Enterprises (Hon Tony Ryall)	Note contents.	None

Contact for Telephone Discussion (if required)

Name	Position	Telephone		1st Contact
Juston Anderson	Senior Analyst, Commercial Transactions Group	04 890 7211	[1]	✓
Chris White	Manager, Commercial Transactions Group	04 890 7256	[1]	

Actions for the Minister's Office Staff (if required)

None.

Enclosure: No

Treasury Report: The economics of the NZ Aluminium Smelter

Executive Summary

This report examines:

- the economics of the NZ Aluminium Smelter (NZAS) at Bluff
- the basis for Meridian's offer of a revised contract to NZAS, and
- NZAS' remediation liability for the smelter site if it decides to close the smelter.

[2,4,7]

[2,4,5,6]

However, Rio Tinto is also unlikely to be successful in its publicly announced strategy of either selling or de-merging Pacific Aluminium.

[2,4,6,7]

Pacific Aluminium's proposals to date have effectively asked Meridian (and therefore the New Zealand public) to transfer between^[2] and^[2] of value to its shareholders. Meridian has to date rejected these proposals.

[2,6,7]

We believe Meridian is taking a commercial approach to the negotiations^[4]) and we support the strategy that Meridian is following.

[2,6,7]

As you know, a senior representative of Sumitomo flew from Japan to participate in the negotiations between Meridian and Pacific Aluminium. The Sumitomo representative took the opportunity to meet with other stakeholders in Wellington, including MFAT.^[5,6]

[4]

Recommended Action

We recommend that you **note** the contents of this report.

Chris White
Manager, Commercial Transactions Group

Hon Bill English
Minister of Finance

Hon Steven Joyce
Associate Minister of Finance

Hon Tony Ryall
Minister for State Owned Enterprises

Treasury Report: The economics of the NZ Aluminium Smelter

Purpose of Report

1. This report examines:
 - the economics of the NZ Aluminium Smelter (NZAS) at Bluff, looking at both past estimated results and forecasts of future results
 - the basis for Meridian's offer of a revised contract to NZAS, and
 - NZAS' remediation liability for the smelter site if it decides to close the smelter/

Economics of NZAS

2. Meridian has invested considerable effort over a number of years into understanding the underlying economics of NZAS, for obvious reasons. Following the approach to Meridian earlier in the year by Pacific Aluminium, Meridian has invested further effort into updating and improving its understanding of the smelter.
3. [2,5,6,7]
4. We have relied on both these sources of analysis in preparing this report. Both give a consistent picture of the underlying economics of NZAS and its likely future profitability.

Production of aluminium

5. Production of aluminium is a three-stage process. The first stage is the mining of bauxite (an aluminium ore). The second stage is the refining of bauxite into alumina (aluminium oxide). The third stage is the smelting of alumina into aluminium. It is this third stage which is carried out at the NZAS site at Bluff. NZAS receives its alumina from Rio Tinto refineries in Australia (at Yarwun in Queensland) who in turn receive their bauxite from Rio Tinto mines in Australia.
6. Smelting one tonne of aluminium from alumina requires approximately 15 megawatt-hours (MWh) of electricity. For comparison, the average household in New Zealand uses approximately 8-10 MWh of electricity a year. NZAS produced around 350,000 tonnes of aluminium in 2011, and used around 5,400,000 MWh of electricity (or 5,400 gigawatt-hours, GWh) in doing so. New Zealand's total electricity consumption is around 40,000 GWh a year. Therefore NZAS uses around 13-14% of New Zealand's electricity consumption.

NZAS historical performance

7. In order to calibrate its model of NZAS future financial performance, Meridian has estimated the past financial performance of the smelter, based on publicly available information such as the company's accounts lodged with the Companies Act.
8. The major costs for NZAS are the purchase and transport of alumina from Australia to Bluff (around ^[2,5,6,7] of its total cash costs based on Meridian's estimates), the very large volume of electricity required to smelt the alumina into aluminium ^[2,5,6,7] of the total cash costs), and the purchase of the other raw materials required in the smelting process (around ^[2,5,6,7] of the total). Other costs, such as staff, are less significant: for NZAS, employee expenses are around 10% of its total cash costs.

9. [2,5,6,7]

10. It is worth noting that while virtually all of NZAS output is exported, the bulk of its inputs are imported (i.e. alumina and “other raw materials” in the table above). In reality, what NZAS exports is the electricity it consumes and the value added by its employees.

11. [2,5,6,7]

12. [2,5,6,7]

13. The poor NZAS result in 2009 was caused by a reduction in aluminium output from the smelter (due to failure of a transformer owned by NZAS) as well as a significant fall in aluminium prices from August 2008, following the GFC. Since 2009 NZAS' profitability has been more modest, due to lower aluminium prices and increases in input costs. The graph on the last page of this report shows world aluminium prices in \$US from 2000 until July 2012. The most recent price of aluminium is \$US 2,132 per tonne.

NZAS costs for alumina

14. Alumina is a widely traded commodity product with a number of suppliers other than Rio Tinto; around 45 million tonnes is produced every year. Meridian has compared the estimated price paid by NZAS to Rio Tinto for alumina with world market prices, and concluded that the price NZAS pays is consistent with industry standard pricing.^[2,4]

NZAS costs for electricity

15. The table below shows the price that NZAS has paid for its total electricity consumption since 2005. The figures are in \$ per megawatt-hour (MWh). Electricity prices are also quoted in cents per kilowatt-hour (kWh), e.g. for residential consumers. To convert from \$/MWh to c/kWh you divide by 10, i.e.^[2,4]
16. These figures include the electricity that NZAS purchased from Meridian under the (old) contract and electricity that NZAS purchased above the contracted level, from the wholesale market.

	NZAS price (\$/MWh) ^[2,5,6,7]
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	

17. For comparison, residential consumers pay an effective price of roughly \$277 per MWh at present (27.7 cents per kWh)¹. However, this includes significant local lines costs, which NZAS does not face as it is directly connected to Transpower's grid. Lines charges (including Transpower's charges) account for around \$106 of the \$277 per MWh paid on average by residential consumers.
18. Under the contract between Meridian and NZAS which takes effect from 1 January 2013, Meridian forecasts that the price NZAS will pay for electricity will increase to around^[2,5,6,7] This is a^[2,5,6,7] increase on the price that NZAS is estimated to have paid in 2012.

¹ With significant regional variation around this average; for example up to \$360/MWh in Northland, and as low as \$228/MWh in Dunedin.

NZAS forecast future performance

19. The historical figures outlined in the section above give a broad indication of the financial issues that NZAS faces. At present, it spends around [2] per tonne of aluminium production on electricity, which is roughly [2] of its total costs of around [2] per tonne².
20. The market (spot) price of aluminium is currently around \$US 2,130 per tonne, which is around \$NZ 2,500 at current exchange rates. Factoring in a price premium of around 10% for the purity of NZAS' product suggests that at current world aluminium prices NZAS is roughly breaking even. Of course NZAS will be receiving long-term contracted prices for its output rather than spot prices, but over time the two should move together.
21. Under the existing contract with Meridian, the price NZAS pays for electricity will increase by around [2] of aluminium in 2013 – meaning NZAS will be losing money, unless aluminium prices increase and/or the exchange rate falls.
22. The electricity price that NZAS pays beyond 2013 will increase over time based on a formula indexed to wholesale prices for electricity in New Zealand, inflation, and world aluminium prices.
23. [2,5,6,7]
24. These figures clearly show that world aluminium prices, and to a lesser extent the exchange rate, are the primary drivers of NZAS profitability. Although electricity represents [2,5,6,7] of costs, it is still a much smaller driver of profitability than aluminium prices. The around [2,5,6,7] of production increase in the price NZAS pays for electricity from 2013 onwards would be more than offset if aluminium prices increase from their current low levels by [2,5,6,7]. Market forecasts are for aluminium prices to increase by around 25% over the next few years and around 50% by 2020.
25. [2,5,6,7]
26. [4]

² Note that this assumes NZAS is operating at close to full output of aluminium; if it reduces production then these costs per tonne would change, as NZAS has fixed costs that don't vary based on its output.

Alternative scenarios

27. Meridian has modelled alternative scenarios where it either agrees to NZAS' original proposal for a much lower electricity price [2,5,6,7] – less than [2,5,6,7] under the existing contract) or to NZAS revised proposal which involves a form of “gain share” for Meridian depending on world aluminium prices.
28. Under either of these scenarios, and using the same exchange rate and aluminium price forecasts as above, NZAS would be profitable and cashflow positive in 2013, and highly profitable in the future. The net present value of cashflows to NZAS would be around [2,5,6,7] under its original proposal, and around [2,5,6,7] under the alternative “gainshare” proposal.
29. In other words, NZAS asked Meridian (and therefore the New Zealand public) to transfer between [2,5,6,7] of value to its shareholders.

[2,5,6,7]

[2,5,6,7]

[2,5,6,7]

[2,5,6,7]

36. While in theory NZAS could close the smelter and cease production immediately, under the contract with Meridian it would need to keep paying for electricity despite not consuming it. In addition, the contract with Meridian is a contract for differences (CfD) and so involves cash payments between Meridian and NZAS equal to the difference between the contract price and the wholesale price for electricity at Tiwai³. If the smelter ceased operation suddenly, the wholesale price at Tiwai is likely to be very low, meaning large cash payments from NZAS to Meridian under the CfD. As a result, it is unlikely to make commercial sense for NZAS to close before 2016, unless it declines to meet its payment obligations to Meridian.
37. [2,4,5,6,7]
38. However, NZAS does have a credible threat to close the smelter from 2016 onwards (under the structure of the contract, the incentives are for a phased shutdown over a few years from 2016). A smelter closure would result in reduced profitability for Meridian, and therefore Meridian has a commercial incentive to offer incentives to NZAS to stay beyond 2016 (up to the net present value of the estimated value loss from the smelter exiting).

Latest developments

39. [2,5,6,7]

40. [2,5,6,7]

41. [2,5,6,7]

³ NZAS buys electricity from the wholesale market at the wholesale price. If the wholesale price is higher than the contract price, Meridian makes cash payments to NZAS, and vice versa. The net effect is to fix the price paid by NZAS at the contract price.

Smelter remediation liabilities

42. The obligation to remediate the smelter site if it is closed is a condition of the consents granted by Environment Southland under the Resource Management Act. The most important consents relate to the landfill (expires 2023) and air discharges (expires 2031). These consents also impose ongoing monitoring obligations on the smelter. It is possible that in the event of a decision to close the smelter that NZAS could retain the consents and continue to comply with the ongoing obligations, therefore not requiring it to fully remediate the site until the landfill consent expires in 2023.
43. There is only limited public information about the scale of remediation required. A landfill management plan submitted at the time of consent renewal states that “The landfill is included in the Closure Plan for all NZAS operations. The NZAS Closure Plan is reviewed and updated at regular intervals. The current Closure Plan provisions for the landfill are to cover, shape and revegetate the area”. The Closure Plan referred to in this section is not a public document.
44. NZAS’s financial statements include a provision for rehabilitation and closure of \$226.8 million as at 31 December 2011. This appears to be a discounted net present value of the costs of rehabilitation and closure at some point in the future (e.g. 2031).
45. [2,4,5,6,7]
46. It is also important to note that the provision is for both rehabilitation and closure, so a significant proportion of it could relate to costs of preparing assets for sale and redundancy, as well as environmental remediation.

Sumitomo

47. Sumitomo is the minority owner of NZAS along with Rio Tinto. As you know, a senior executive from Sumitomo recently travelled from Japan to participate in the discussions with Meridian. The Sumitomo executive also took the opportunity to meet with other parties in Wellington, including MFAT.
48. [2,5,6]
49. [2,5,6]
50. [2,5,6]

