Australian Government
Department of Industry, Innovation and Science

Secretary

Dr Kathleen Dermody
Committee Secretary
Senate Economics References Committee
PO Box 6100
Parliament House
CANBERRA ACT 2600

Dear Dr Dermody

Thank you for the invitation to the Department of Industry, Innovation and Science to make a submission to the inquiry into bauxite resources near Aurukun on Cape York Peninsula.

The Department welcomes the opportunity to provide a submission to assist the Committee in its understanding of Australian and global aluminium markets, and the characteristics of the Aurukun bauxite deposit.

If you have any questions in relation to the this submission, please contact Josh Cosgrave, Acting General Manager, Coal & Minerals Productivity Branch on
or

Yours sincerely

Glenys Beauchamp

19 February 2016

Phone: (02) 6213 6650 **Fax:** (02) 6213 6657 **Email:** Glenys.Beauchamp@industry.gov.au
Industry House - 10 Binara Street, Canberra City, ACT 2601 - GPO Box 9839 Canberra ACT 2601 - **www.industry.gov.au** - ABN: 74 599 608 295

Australian Government

Department of Industry, Innovation and Science

Submission to the Senate Economic References Committee:

Inquiry into Bauxite Resources near Aurukun in Cape York

19 February 2016

Terms of Reference

The Senate Inquiry terms of reference are as follows:

- The development of the bauxite resources near Aurukun in Cape York, with particular reference to:
  a) the economic development of the bauxite resources near Aurukun in Cape York;
  b) any issues relating to native title rights and interests on the land on which these resources are located;
  c) the process for the finalisation of an exclusive Mineral Development Licence Application on this land;
  d) any opportunities for traditional owners to receive ongoing benefit from the resources located on this land; and
  e) any other related matter.

Table of Contents

List of Figures and Tables:

Introduction

On 24 November 2015, the Senate referred an inquiry into the development of bauxite resources near Aurukun in Cape York to the Senate Economics References Committee.

In consultation with its portfolio agencies, Geoscience Australia and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Department of Industry, Innovation and Science submits the following information to assist the Committee's Inquiry:

An overview of bauxite resources including:

- The scale of Australia's bauxite resources; and
- The extent and quality of reserves in Queensland and near Aurukun.

An overview of forecast global demand and supply for bauxite including:

- Chinese plans to build new alumina refineries and increase aluminium production;
- Increasing demand for Australian bauxite; and
- Queensland's position to supply bauxite.

World market

Aluminium Consumption and Production

1. Bauxite consumption is underpinned by aluminium consumption and production. Over the medium term, global consumption of aluminium is expected to be driven by:

    - The transport sector, particularly the automotive industry where aluminium is increasingly used to reduce the weight of vehicles and meet energy efficiency requirements;
    - Investment in infrastructure and utilities, such as power lines;
    - Production of manufactured goods, such as appliances, for use by the expanding middle class in emerging economies; and
    - Innovation and application of new technologies that will use aluminium as a substitute for heavier, more expensive metals.

2. Global consumption of aluminium is projected to increase by almost 3 per cent per annum to 63 million tonnes in 2020, and China's consumption of aluminium is forecast to account for 54 per cent of global consumption in 2020 (Department of Industry, Innovation and Science, 2015).

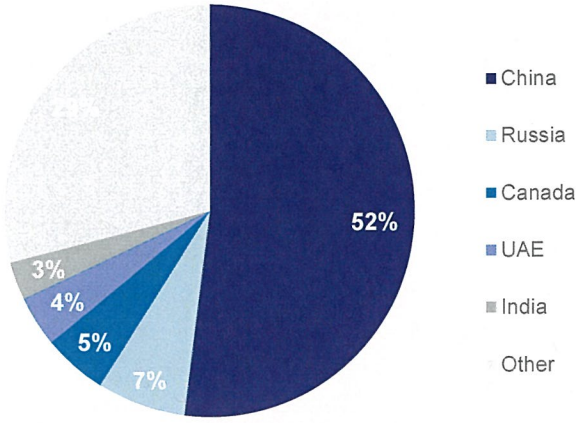
3. Global aluminium production is dominated by China (Figure 1). Accordingly, developments in China's aluminium industry will be key to the outlook for bauxite demand. China's production growth will be affected by the interaction between the construction of new, more efficient plants and the extent of closures of smaller, less efficient or unprofitable plants. Australia's aluminium production is slightly lower than India's, coming in at seventh with a 3 per cent share of global production in 2014.

4. Low prices and overcapacity in China has contributed to growing pressure on China's aluminium producers. In late October 2015 the Aluminium Corporation of China (Chalco) announced its intention to close its Liancheng smelter with a capacity of 550,000 tonnes per annum.

5. Although there is substantial investment in new aluminium production capacity in China, current operating conditions will not support its use. According to a report by the China Nonferrous Metals Industry Association, it is estimated that only 48 per cent of China's planned new aluminium production capacity will operate during 2016.

6. As part of measures to curb oversupply, China's Ministry of Industry and Information Technology released a list of companies that comply with national standards on production, environmental protection, energy efficiency and safety. Those companies not identified on the list are expected to be closed. Major aluminium producers such as Chalco, China Honqiao, Xinfa and East Hope are among the largest producers on the list.

Figure 1 World aluminium production



Source: WBMS, 2015

Bauxite Consumption

7. As a key input in the aluminium supply chain, the secure supply of bauxite is becoming a key issue for the production of alumina and aluminium. China is the largest bauxite importer, accounting for 53 per cent of world imports in 2014 and is the principal destination for Australia's bauxite exports (WBMS, 2015). China is expected to remain the driver of future growth in consumption. In 2015, it is estimated that China commissioned 3.9 million tonnes of aluminium smelting capacity, providing a strong base for bauxite demand (Department of Industry, Innovation and Science, 2015).

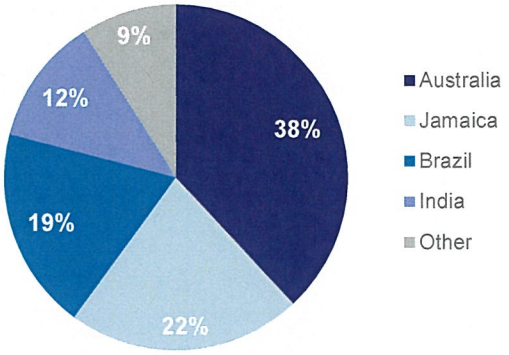
8. China has considerable domestic bauxite reserves in the southern provinces of Guangxi and Guizhou. However, domestic supply is constrained by lower quality bauxite and consequently larger processing costs, as well as considerable transport distances to the western and northern provinces where most smelters are located. In general, China's alumina is produced in the eastern provinces from imported bauxite and transported to the western provinces, where energy costs are lower, for smelting into aluminium.

9. In the long term, new technologies for substitutes, including obtaining alumina from other sources such as alumina-bearing clays and coal fly ash, may reduce China's dependence on imported bauxite, especially where transport costs are high such as in western China. Growing environmental awareness and relatively high efficiency of recycling aluminium may also cause aluminium consumption and production to diverge. China will begin to build a larger stockpile of aluminium for recycling as the lifecycle of vehicles and buildings comes to an end (AME, 2015).

Bauxite Production

10. Approximately 76 per cent of the world's known bauxite reserves are held in Guinea (western Africa), Australia, Brazil, Vietnam, Jamaica and Indonesia (USGS, 2015), with world bauxite exports dominated by Australia (Figure 3).

Figure 2 World bauxite exports



Source: WBMS, 2015

11. Geography and the resulting cost of transportation are two key factors driving the investment decisions of exporters. China's bauxite imports are primarily from Australia, India and Malaysia. While China has continued to invest in developing its lower quality domestic bauxite reserves to increase domestic supply, higher bauxite quality, such as that found in Australia, tends to provide benefits that offset higher freight costs involved with imports (AME, 2015).

12. There have been some recent disruptions in the world bauxite market. Prior to 2014, Indonesia was a major supplier to China. However, in 2014 Indonesia introduced an export ban on unprocessed raw materials to encourage the development of domestic processing and value-add activities. Following the ban, Australia's bauxite producers increased production for export markets and Malaysia emerged as a significant supplier of bauxite to China. More recently, Malaysia announced a three month ban on ore mining due to concerns over its environmental impact. The ban took effect on 15 January 2016. After three months, it is expected that bauxite production in Malaysia will be limited to available capacity to ship the material (Bloomberg Business, 2016).

13. There are several bauxite projects currently under construction or that have recently started production in Vietnam and Guinea which will partially offset the cuts in supply from Malaysia and Indonesia. Exports from Guinea to China began at the end of 2015 after a Chinese consortium invested in the Boke port wharf project in Guinea, which increased bauxite export capacity by more than 30 million tonnes a year.

Bauxite Price Outlook

14. Bauxite prices are generally negotiated through long-term contracts. While constraints on supply from Indonesia and Malaysia's ban on bauxite mining, may place upward pressure on bauxite prices in the short term, this will be moderated by China's relatively high stockpiles, increased supply from China's domestic reserves, and the development of bauxite mines in Vietnam and Guinea and refineries in Indonesia.(Office of the Chief Economist)

The Australian market

The Australian Aluminium Industry

15. The Australian aluminum industry has been operating for over 50 years, and throughout that time has been a significant contributor to the Australian economy. The industry currently consists of:

    - Five bauxite mines
    - Six alumina refineries
    - Four aluminium smelters

16. Australia's five bauxite mines are at Weipa in Queensland, Gove in the Northern Territory, and three mine complexes in the Darling Ranges south-west of Perth, where bauxite is provided directly to three alumina refineries.

17. Australia's six alumina refineries are located at Pinjarra, which opened in 1972; Worsley and Wagerup – which both opened in 1984; Kwinana, which opened in 1963; and two in Gladstone, Queensland (QAL, which opened in 1967 and Yarwan, which opened in 2004).

18. The four operating aluminium smelters are the small Bell Bay refinery in Tasmania, which opened in 1955 and three much larger smelters at Portland in Victoria, Tomago in NSW and Boyne Island in Gladstone, Queensland which were built in the 1980s. Australia has lost smelting capacity in recent years with the closure of the New South Wales Kurri Kurri smelter in 2012 and the Victorian Point Henry smelter in 2014.

19. Employment in the bauxite, alumina and aluminium sectors is centred on regional areas reflecting the location of the main production facilities. According to the Australian Aluminium Council, in 2011 Australian bauxite, alumina and aluminium operations employed around 17,600 employees, of which 13,600 were directly employed (13,800 in 2010) and around 4,000 were contractors (3,000 in 2010).

20. Aluminium use in Australia is estimated to be around 450,000 tonnes and is primarily used in building and construction and transport and packaging. The estimated capital replacement cost of Australian production capacity is over AUD$50 billion.(Australian Aluminium Council 2016)

21. Aluminium production is a two-stage process. The first stage is the chemical Bayer Process where alumina (Al_2O_3) is extracted from bauxite in a refinery. The second stage of aluminium production takes place in a smelter. The electrochemical Hall-Héroult Process uses huge amounts of electricity to extract aluminium metal from alumina.

22. Historically the Australian industry was highly integrated. However, bauxite exports have recently increased as bauxite previously used for domestic alumina refining has been redirected to international markets, primarily China (Table 2). This has been driven by the increase in capacity of China's alumina refineries and aluminium smelters and the supply gap left by Indonesia's ban on raw material exports.

23. Australia is the world's largest exporter of both bauxite and alumina, accounting for 38 per cent and 45 per cent of world exports, respectively (WBMS, 2015). Australia is also a major aluminium producer. In 2014–15, 25 per cent of bauxite produced and 87 per cent of both alumina and primary aluminium produced were exported (Department of

Industry, Innovation and Science, 2015). In 2014–15, Australia exported 20.2 million tonnes of bauxite worth $934 million, 17.4 million tonnes of alumina worth $6.4 billion, and 1.4 million tonnes of aluminium worth $3.8 billion (Department of Industry, Innovation and Science, 2015).

Table 1: Australia's production and trade in bauxite, alumina and aluminium, 2014-15

Commodity	*Unit*	*Australian production*	*Australian exports volume*	*Australian exports value (A$m*)*	*Share of world exports^ (%)*
Bauxite	Mt	80	20	958	38
Alumina	kt	19895	17363	6514	45
Aluminium	kt	1647	1432	3926	7

Sources: Department of Industry, Innovation and Science, WBMS
*In current financial year Australian dollars
^In 2014

Table 2: China and Australia trade in bauxite, alumina and aluminium 2014-15

Commodity	*Unit*	*China's total imports*	*Australian exports to China*	*Share of China's imports (%)*	*Share of Australia's exports (%)*
Bauxite	Mt	39	18	47	90
Alumina	kt	4325	2324	54	13
Aluminium	kt	162	23	14	2

Sources: Bloomberg, WBMS, CEIC.

Key drivers of future demand for Australia's bauxite

24. In the short term, the bauxite, alumina and aluminium industry will be affected by issues affecting global commodity markets, as subdued consumption growth and slow supply side responses place downward pressure on prices. However, there will continue to be strong demand for Australia's bauxite from China, particularly in the medium term, underpinned by strong aluminium consumption growth. The recent expansion of alumina refining and aluminium smelting capacity in China highlights the growing importance that China's producers place on securing ongoing bauxite supplies. While Australia is geographically advantaged to supply China, demand for Australia's bauxite will be moderated by increases in production and supply capacity from other emerging major producers such as Guinea.

Bauxite Resources and Alumina in Queensland and Australia

25. Figure 4 provides a geographical overview of the location of Queensland's bauxite deposits. Figure 6 focuses on the deposits near Weipa and Aurukun.

26. Australia's national inventory of mineral resources is based on two general criteria: (1) the geological certainty that the mineral resource exists and (2) the economic feasibility of extracting the resource over the long term.

27. The highest category in the National Resource Classification System is Economically Demonstrated Resources (EDR). EDR are predominantly derived from combining the

Proven and Probable Reserves and Measured and Indicated Resources categories of the JORC Code[1] as published by mining and exploration companies.

28. The JORC Code is a professional code of practice that is used in Australia by mining and exploration companies to inform the market. It is recognised internationally and the ore reserve and mineral resource categories correlate with the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources.

29. As at December 2014, Australia's EDR of bauxite was 6195 million tonnes (Mt) of which 3357 Mt (54%) occurred in Queensland, principally in the Cape York region. The largest deposits occur at Weipa, operating since 1961, and at Aurukun, as yet undeveloped but containing 5% of Australia's EDR of bauxite.

30. Australia's EDR of bauxite as at December 2015 will not be finalised until Rio Tinto releases its 2015 annual report in March 2016. However, other active companies in Queensland have released resource statements in 2015. Table 4 lists the most recent published resources for each deposit in Queensland.

31. Aurukun is one of the minority of deposits in the national inventory that has an EDR that is not based on the JORC Code. The resource estimation for Aurukun was reported in 1972 and thus predates the JORC Code which was not widely used until 1989.

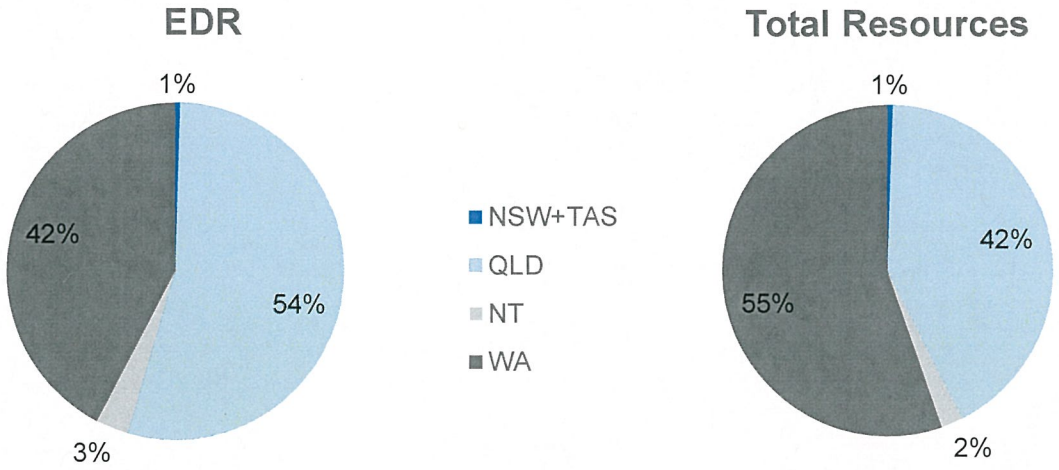


Figure 3. Percentage of EDR and total resources of bauxite held by each state and the Northern Territory.

32. Australia has over 9800 Mt of total (EDR + subeconomic + Inferred Resources) identified bauxite resources, with Queensland holding 42% (Figure 4) and the Aurukun deposit 4.5% of the nation's total.

33. Australia's reserves of bauxite (as at December 2014) are 2087 Mt (Table 3). Reserves provide a shorter term, commercial outlook and are based on stringent economic and geological modelling. Reserves have the greatest economic and geological certainty.

34. Inferred Resources is the category with the least geological and economic certainty; it is not part of EDR. Inferred Resources in Australia amount to 2065 Mt (Table 3). In Queensland, Inferred Resources are currently 662 Mt with the bulk occurring at Weipa

[1] The Joint Ore Reserves Committee (JORC) Code forms part of the listing rules for mining and exploration companies on the Australian Securities Exchange.

and the remainder divided between eight other, smaller, deposits, six of which occur in the Cape York region. Currently, there are no Inferred Resources at Aurukun.

35. Paramarginal and submarginal resources are subeconomic. A paramarginal deposit is regarded as one that only just fails economic tests. A favourable shift in one or more economic parameters (such as commodity price, access to infrastructure or processing costs) or geological parameters (such as increased size and grade of the mineral resource) could see the deposit reassessed as economic. A submarginal deposit is one that would need substantially higher commodity prices or major advances in cost-saving technology to become economic.

36. Australia has 144 Mt of paramarginal resources, most of which are located at the Aurukun deposit in Queensland, and 1429 Mt of submarginal resources, located at Cape Bougainville and the Mitchell Plateau in the remote wilderness in the north of Western Australia.

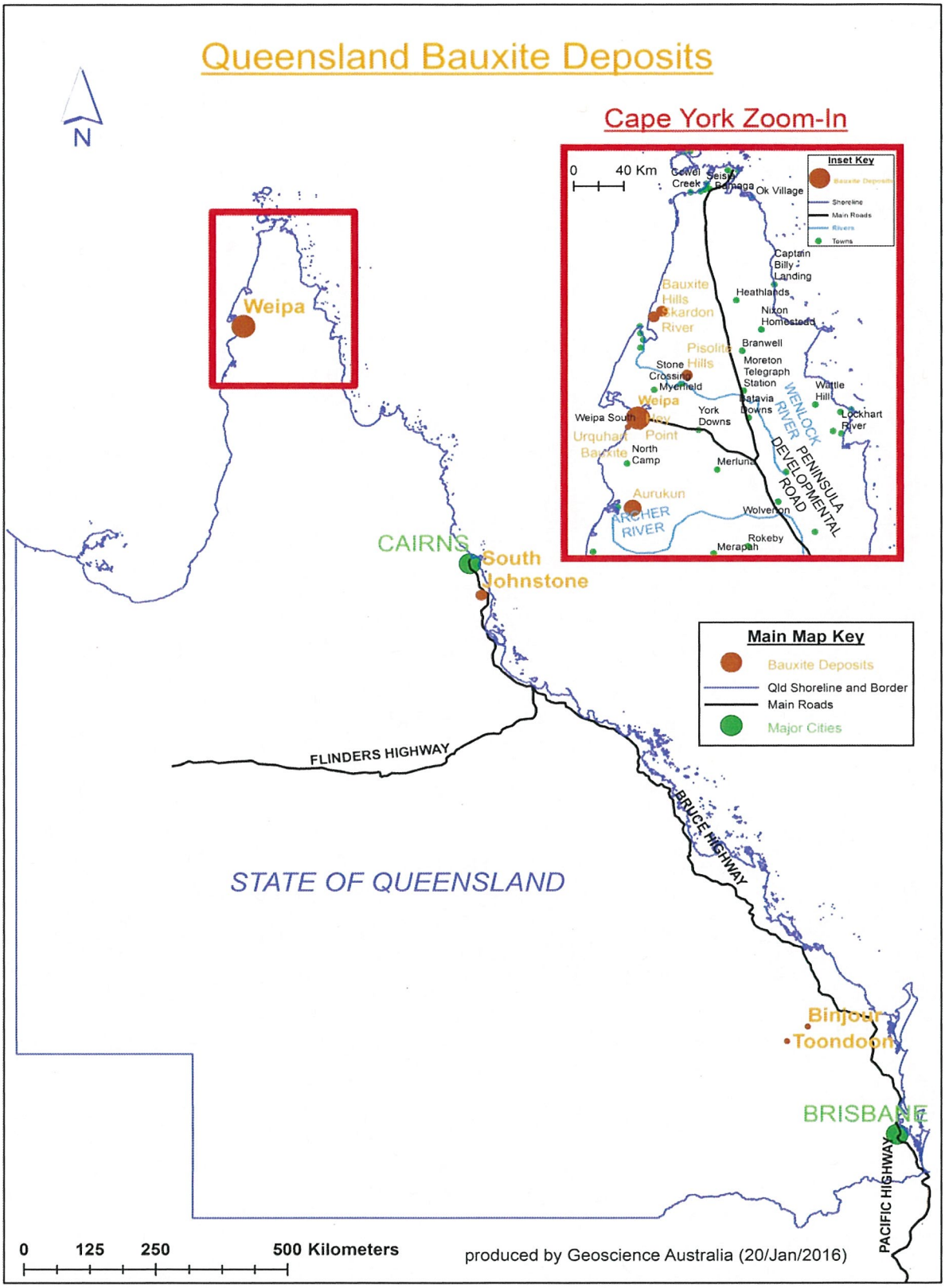


Figure 4: Map of Queensland showing bauxite deposits with identified mineral resources.

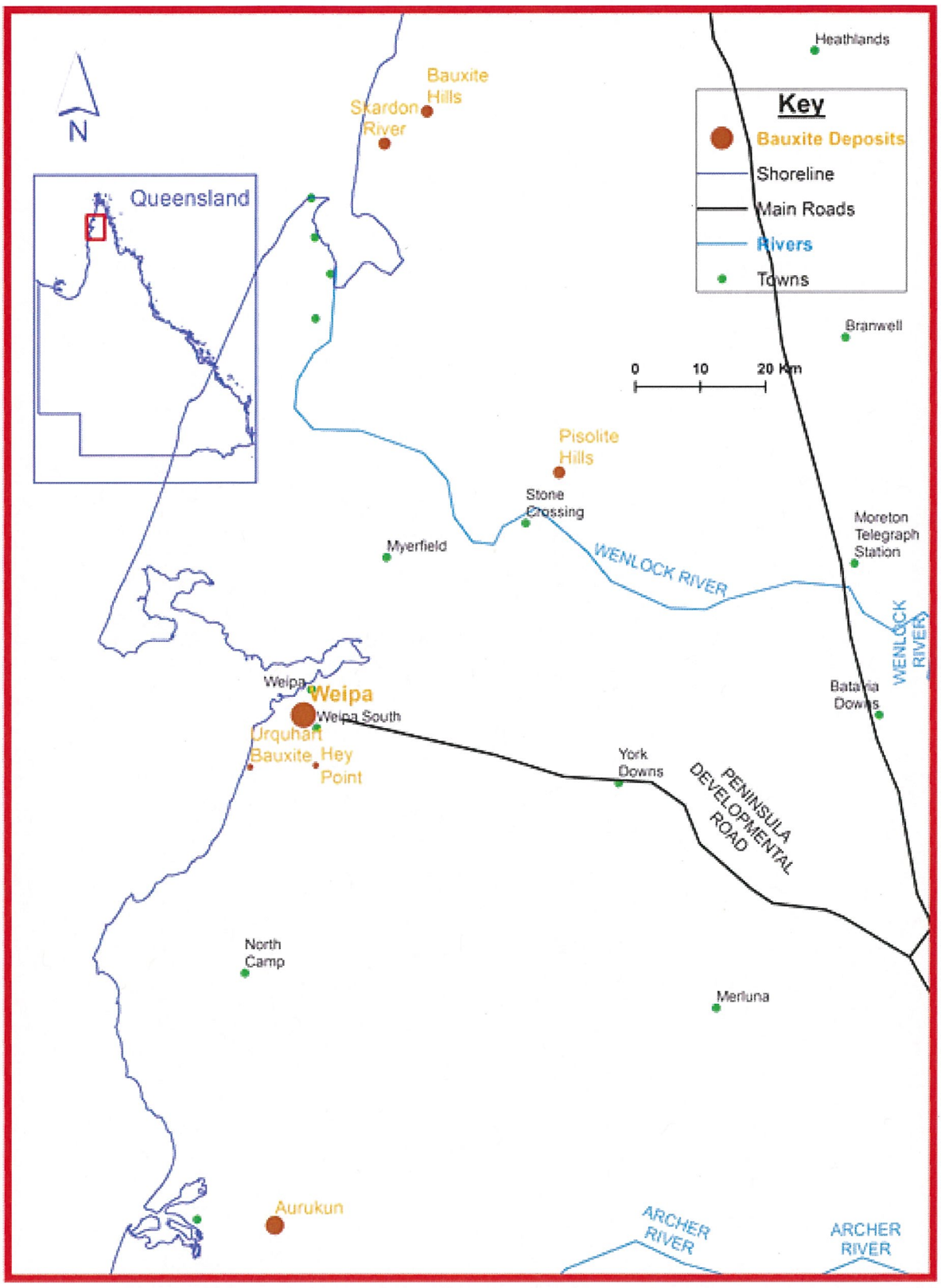


Figure 5. Map of western Cape York showing bauxite deposits with identified mineral resources.

Table 3. Bauxite resources and production by jurisdiction, as at December 2014.

	JORC Reserves (Mt)	EDR (Mt)	Paramarginal (Mt)	Submarginal (Mt)	Inferred Resources (Mt)	Mine Production (Mt)
New South Wales		**27.5**			**22.8**	
Northern Territory	**146**	**194**			**8.3**	**6.529**
Queensland	**1484**	**3357**	**114**		**662**	**26.267**
Tasmania					**3.1**	
Western Australia	**457**	**2616**	**30**	**1429**	**1369**	**45.836**
Australia	**2087**	**6195**	**144**	**1429**	**2065**	**78.632**

Source: Geoscience Australia and the Office of the Chief Economist.

Table 4. Bauxite resources in Queensland as at December 2015*.

	JORC Reserves (Mt)	EDR (Mt)	Para-marginal (Mt)	Sub-marginal (Mt)	Inferred Resources (Mt)	Total Resources (Mt)	Controlling Company
Aurukun		**324.9**	**114.1**			**439**	**Qld Gov/Glencore plc**
Bauxite Hills	**48.2**	**50.6**			**4.9**	**55.5**	**Metro Mining Ltd**
Binjour		**9.6**			**5.3**	**14.9**	**Australian Bauxite Ltd**
Hey Point					**2.5**	**2.5**	**Racle Resources Pty Ltd**
Pisolite Hills		**59.6**			**29.3**	**88.9**	**Metro Mining Ltd**
Skardon River	**48.3**	**59.1**			**19.7**	**78.8**	**Gulf Alumina Ltd**
South Johnstone		**1.9**			**28.8**	**30.7**	**Queensland Bauxite Ltd**
Toondoon					**2.4**	**2.4**	**Australian Bauxite Ltd**
Urquhart Bauxite					**7.5**	**7.5**	**Metallica Minerals Ltd**
Weipa*	**1484**	**2899**			**490**	**3389**	**Rio Tinto Alcan Inc**
Interim Total	**1581**	**3405**	**114.1**		**590**	**4109**	

* Weipa as at December 2014, includes Amrun (South of Embley). Source: Geoscience Australia.

The Aurukun Bauxite Deposit

37. The Aurukun deposit covers a large area of western Cape York to the south of the mining town and bauxite deposit of Weipa. The area spans about 85 km from north to south and about 20 to 30 km from east to west. By road, the northern exploration camp is 150 km from Weipa, but 40 km by ferry.

38. Work at the Aurukun deposit began in the 1960s with the first significant work undertaken by Comalco in 1967. Work by Tipperary Joint Venture was from 1968 to 1971 under an Authority to Prospect, and then the ground was held by Aurukun Associates (Pechiney Australia Pty Ltd) under a mining lease in which the construction of an alumina refinery was meant to commence by 1983. Despite extensions to the deadline, the deposit was not developed and was surrendered to the Queensland Government in 2003.

39. In 2004, IMC Consultants Pty Ltd prepared a report for the Queensland Government reviewing the Aurukun deposit and the work that had been done from 1968 to 1972. Exploration and resource definition work on the deposit from the mid-1970s until its return to the Queensland Government in 2003 is not in the public domain as there is no requirement to report under a mining lease in Queensland. Thus the IMC review, while restricted in its information, provides the most recent overview of the deposit. Much of the following information is derived from that report.

40. The Aurukun deposit is divided into the North Watson and South Watson areas. North Watson contains the Coconut, Tapplebang, Possum and three other smaller zones. The South Watson area contains the South Watson and Kokialah zones.

41. Tipperary Joint Venture undertook an extensive exploration program at Aurukun from 1968 to 1971 with over 10,000 drill holes, 35,000 samples and 3,000 line kilometres cut. IMC Consultants regarded this exploration program as ahead of its time and consistent with modern mining and sampling practices at Weipa.

42. The main findings of the Tipperary exploration program were:

    - The bauxite was variable both in thickness and in areal extent as the bauxite plateau is incised and eroded by rivers and streams.
    - The Aurukun bauxite is higher in reactive silica ($RxSiO_2$) than bauxite areas to the north and will thus require a silica cut-off grade, which is a more complicated scenario than mining the entire bauxite profile (as done at Weipa).
    - The quality of the bauxite deteriorates to the south.

43. Tipperary Joint Venture identified the northern Coconut area as the most economic deposit and this resource was the target of the 1971 feasibility study. The company initiated a 1,000 foot grid drilling pattern for all areas to define an "Indicated Reserve" and a 500 foot drilling pattern at Coconut and Tapplebang to define a "Proven Reserve". Neither of these categories is compliant with the JORC Code or current JORC standards; however Geoscience Australia regarded the resource delineation as sufficient to classify Aurukun as having an EDR (North Watson) and a paramarginal resource (South Watson) under the National Resource Classification System. The "Proven Reserve" was estimated to be 50 Mt of beneficiated bauxite at 55% Al_2O_3 and 6% $RxSiO_2$.

Table 5. Identified bauxite resources at Aurukun, Queensland. From IMC Consultants, 2004.

Resource	In Situ Bauxite (Mt)	Beneficiate Bauxite (Mt)	Al_2O_3	$RxSiO_2$
North Watson	**330**	**248**	**53.1%**	**7.4%**
South Watson	**109**	**77**	**55.1%**	**7.2%**
Total	**439**	**325**	**53.6%**	**7.4%**

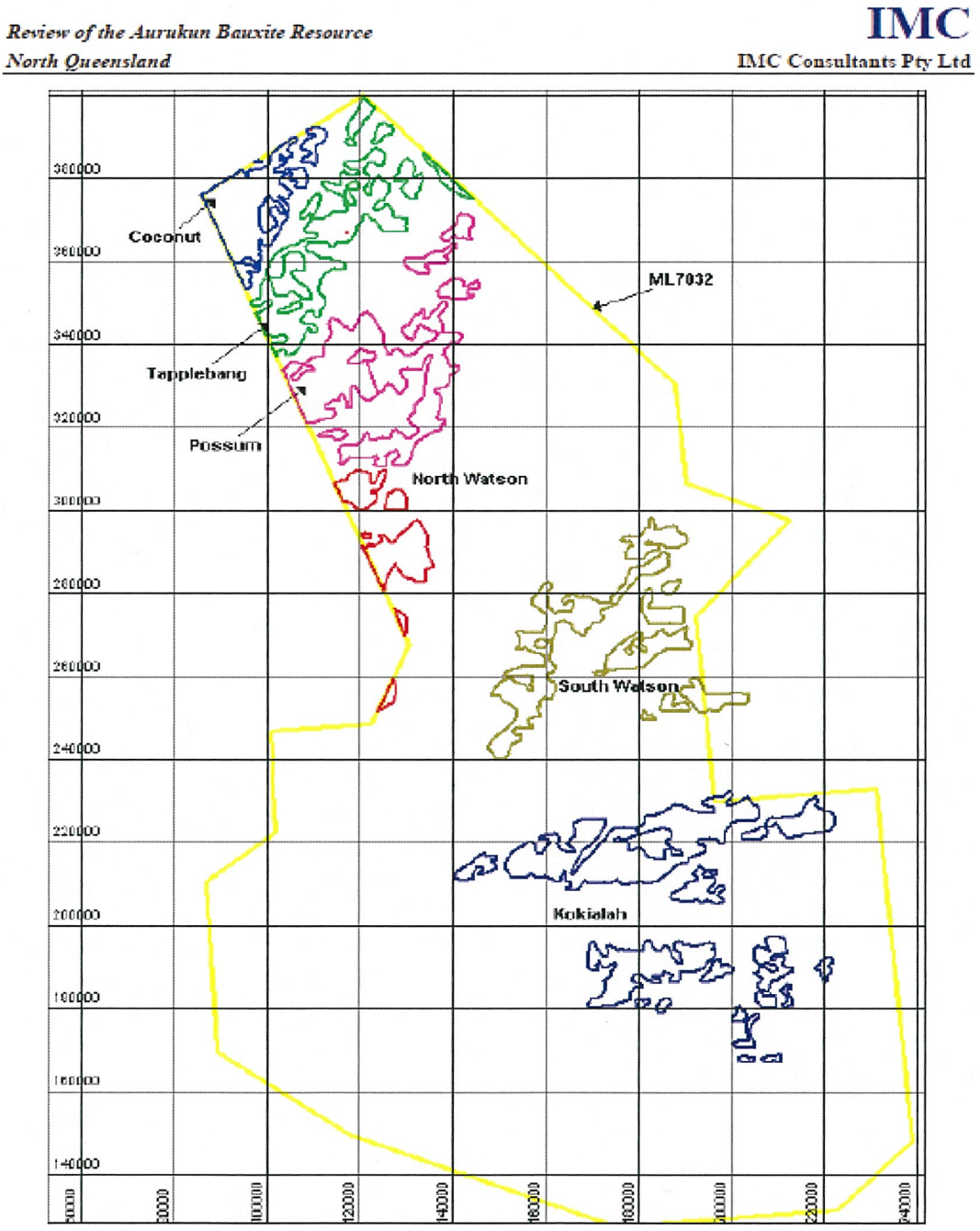


Figure 6.. Outline of the known extent of the bauxite in the Aurukun area. Note that the scale is in feet. From IMC Consultants 2004.

Bauxite Quality and Potential Opportunities for Australian Producers

Bauxite Quality

44. Australia's operating bauxite resources are known for their high quality. Quality is determined not just by the aluminium content but also by other minerals present in the ore, such as silica, iron oxides and titanium oxides. The amount of reactive silica is particularly important as this strongly impacts on the processing costs of alumina refineries; reactive silica consumes the caustic soda that is required by the Bayer Process for releasing the alumina content from the ore. Low reactive silica means lower processing costs.

Australian Advantages

45. Other countries have equally high quality bauxite but have constraints on growth. For instance, development of Guinea's extensive bauxite deposits is hampered by poor infrastructure and high shipping costs from West Africa to China. Conversely, Queensland has relatively low shipping costs from Cape York to Gladstone and to the Chinese markets.

46. Rio Tinto ships to the Chinese markets from both its Weipa operation at Cape York and its Gove operation in the Northern Territory. In addition, its new Amrun (South of Embley) development will supply an increased amount of bauxite in the coming decades. Meanwhile, Alcoa in Western Australia has been given permission by the Western Australian Government to export up to 500 000 t of bauxite for metallurgical testing in Asia in 2016.

47. A number of Australian juniors have been positioning themselves to supply the Chinese low-temperature refineries, particularly since Indonesia has largely ceased supply. In Western Australia, Bauxite Resources Ltd has entered into joint ventures with two different Chinese companies (state-owned enterprises) to supply Darling Range bauxite, although one of these joint ventures is now solely controlled by its Chinese owner. On the east coast, Australian Bauxite Ltd has projects in Queensland, New South Wales and Tasmania. In Tasmania, the company has begun mining and was expecting to make its first shipment (in January 2016) but has run into offtake issues forcing it to place its mine on care and maintenance. In Queensland, Racle Resources, Metro Mining, Metallica Minerals and Gulf Alumina are all seeking to supply Direct Shipping Ore (DSO) to foreign markets.

48. DSO is generally a cheaper, lower-quality product as it is essentially raw bauxite loaded onto the barge. However, it has the advantage of not requiring beneficiation (upgrading by screening and washing) and the extra operating and capital costs associated with this process. In addition, the environmental footprint of the mining operation is reduced as tailings dams are not needed.

49. Australian companies have not been alone in seeking to supply bauxite to Chinese refineries. South East Asian countries such as Vietnam, Laos, Malaysia and the Philippines also have undeveloped bauxite deposits, and while sometimes constrained by difficult topography and/or poor infrastructure, these countries have the advantage of geographical proximity to China.

50. Malaysia's recent and unexpected emergence as a significant bauxite exporter has been somewhat topical. Doubts exist about the capability for long-term sustainable bauxite supply to come from Malaysia as most of its deposits are small. To date, Malaysia does not have the same high quality and areal extent of the large deposits found in Australia.

51. The development of the Aurukun deposit has the potential to provide a sustainable source of bauxite to a number of Asian and Middle Eastern customers, as well as to Australian refineries and smelters. Uncertainties remain, however, about the quality of the bauxite at Aurukun and the economic viability of extracting it.

References

Department of Industry, Innovation and Science 2015, Resources and Energy Quarterly, December Quarter 2015

World Bureau of Metal Statistics 2014, World Metal Statistics

Australian Aluminium Council 2016, http://aluminium.org.au/

AME 2015, Alumina Strategic Market Study, September Quarter 2015

AME 2015, Aluminium Strategic Market Study, September Quarter 2015

U.S. Geological Survey 2015, Mineral Commodity Summaries, January 2015

Bloomberg Business 2016, Malaysia to ban bauxite mining for 3 months to cut pollution, 6 January 2016, http://www.bloomberg.com/news/articles/2016-01-06/malaysia-to-ban-bauxite-mining-for-3-months-to-fight-pollution

Bray, E.L., (2015). Aluminium. 2014 Mineral Yearbook. United States Geological Survey, Reston.
http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/myb1-2014-alumi.pdf

Britt et al (2015). Australia's Identified Mineral Resources 2015. Geoscience Australia, Canberra.
http://www.ga.gov.au/metadata-gateway/metadata/record/gcat_21a2c93c-b691-d570-e053-12a3070a9f90/Australia%27s+Identified+Mineral+Resources+2015

Horton, J., (2004). Review of the Aurukun Bauxite Resource in North Queensland for Queensland Government, Department of State Development and Innovation. IMC Consultants Pty Ltd, Brisbane.

International Aluminium Institute. Latest Statistics.
http://www.world-aluminium.org/statistics/

Office of the Chief Economist (2015). Resources and Energy Quarterly, Statistical Data.
http://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Pages/Resources-and-energy-quarterly.aspx

Roullier, J.P. (1990). Bauxite Deposits, Mining Operations and Producers of the World. Aluminium-Verlag, Germany.

US Geological Survey (2015). Mineral Commodity Sum