Equity Research

Metro Mining

BUY

MMI AU

June 2, 2015

Last: **A$0.09**
Target: **A$0.20**

Initiating coverage: High-margin Weipa bauxite DSO

Metro Mining is an ASX-listed bauxite developer

Metro owns Bauxite Hills, a bauxite project that straddles Rio Tinto's world-class Weipa operation in Cape York, Australia. Bauxite Hills has a ~54Mt at 51% Al_2O_3 resource with a PFS outlining a ~2Mtpa / ~21 year DSO operation. Capex is modest at only $20m and economics robust with a project $NPV_{15\%}$ of $150m and 88% IRR using a $70/t CIF price, which we note is close to spot.

Free dig, low-strip, direct ship ore proximal to China

Bauxite Hills' proximity to key growth market, China gives it an immediate ~$20/t cost advantage over its LatAm and African peers. Bauxite is produced from free dig mining and screening, with a short-barge contributing to a low breakeven cost of ~$50/t landed China. This compares to spot prices of ~$70/t and implies a very healthy ~$18/t EBITDA or ~$35m pa steady state.

First class equity returns with expansion potential

Metro needs a modest ~$35m to reach cash flow breakeven with permitting and the DFS due by 1Q16. Bauxite Hills should attract a good level of gearing, but even conservatively assuming ~60% debt with equity at spot drives a 2018, in-production, valuation of ~$180m based on 5xEBITDA and 1xNAV. This gives a post-raise equity IRR of ~80% with upside from doubling output.

Bauxite fundamentals attractive in the short-term

The growing use of aluminium has seen China develop its own refining ability and become a big end-user. Like iron ore, the majors control the best assets, making it very difficult for the Chinese to secure bauxite supply away from China where reserves are in decline. We believe exposure to low cost, low-capex bauxite remains the best way to play a likely bauxite supply squeeze.

Initiating with a BUY rating and A$0.20 target price

We value Metro Mining at $179m on a DCF basis using spot prices, adding $10m nominal for exploration and cash, but removing for corporate admin. To account for feasibility and permitting risk, we ascribe a 0.4x multiple to arrive at our BUY rating and fully diluted (post $15m equity) PT of A$0.20/sh.

Summary

Rating	BUY
Target	A$0.20

Project Detials

Project Name:	Bauxite Hills
Production (Mtpa):	2.0
Breakeven cost ($/t CIF)	50
GMP Project NPV10%:	191

Share Data

Shares o/s (mm, b/f.d.)	288.7 / 467.2
52-week high/low	0.10 / 0.02
3M avg daily vol (m)	0.35
3M avg daily val (m)	0.05
Market cap (m)	18.9
Net cash (debt) (m)	4.2
Enterprise value (m)	13.4
Projected return	134%

Financial Data

YE Jun. 30	2014A	2015E	2016E
Revenue (A$m)	0.3	0.7	-
EBITDA (A$m)	(1.3)	(3.3)	(4.0)
Net income (A$m)	(17.6)	(2.9)	(4.2)
EPS	(0.01)	(0.01)	(0.01)
CFPS	(0.00)	(0.01)	(0.01)
PER	-	-	-
P/CF	-	-	-
EV/EBITDA	-	-	-
$1.0xNAV_{10\%}$			A$0.50

All figures in US$ unless otherwise noted

Current Chart Previous Research

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Investment thesis

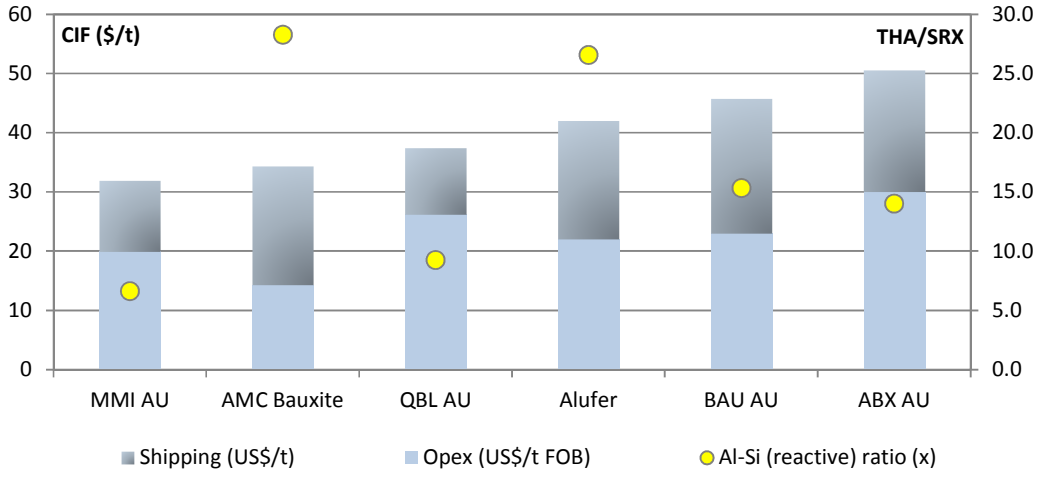
Simple, near coast DSO with very robust economics

Metro's flagship, Bauxite Hills project straddles the world-class ~25Mtpa Weipa operation in Cape York, Australia. The project hosts free dig, bauxite DSO ~15km from the coast with ~54Mt in resource grading ~51% Al_2O_3. Bauxite Hills hosts Indonesian type low-temp DSO, which is precisely what the growing Chinese merchant refineries have been configured to use. This product is by no means the best on the market with a THA (available alumina at 150°C) to reactive silica ratio of ~6x (vs. ~5x in China, ~8x good quality and ~12x very high quality DSO). Accordingly, Metro anticipates attracting a ~$15/t discount (vs benchmark spot at ~$70/t), which is more than offset by the project's very low capex ($0.4/t over LOM) and opex (~$50/t break-even CIF) to mine, barge and ship to China. Project economics support this view, with the 1Q15 PFS returning a robust project $NPV_{15\%}$ of ~$150m and IRR of 88% using spot bauxite prices.

Low breakeven costs drive an EBITDA larger than capex

Bauxite Hills' quality hinges on: (i) its ease of mining (shallow, free dig) and minimal processing, (ii) low cost to barge onto a bulk carrier, and (iii) proximity to China. Together these attributes drive a competitive breakeven cost of ~$50/t CIF China, which accounts discounts, moisture, freight and marketing as costs rather than revenue deductions. Bauxite is a fairly low-value bulk at ~$70/t, which makes logistics an important cost driver. China is a key market for new tonnes given the growth in its Stage 1 refining capacity, which lags Stage 2 refining by quite some distance. Despite hosting some of the world's largest and best quality reserves, on a value-in-use basis, LatAm and African bauxite is at a disadvantage to Cape York bauxite, which benefits from an immediate $20-30/t sea freight advantage. In turn, this helps drive EBITDA generation of ~$35m pa which is larger than capex to production and supports payback in under 18 months.

Figure 1. CIF costs pre-discounts and THA/SRx ratio



Source: GMP, Company estimates

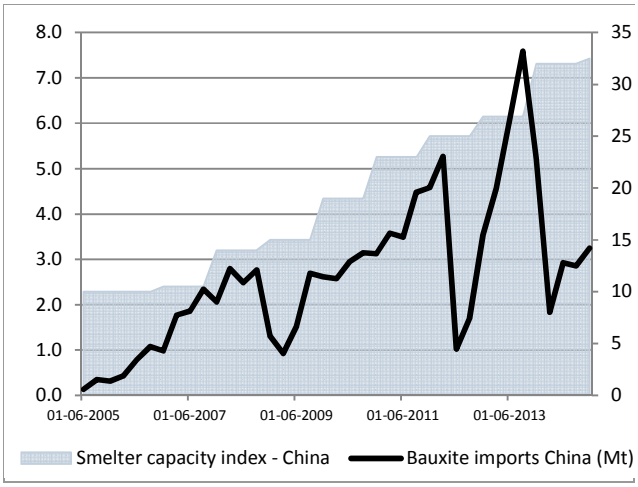
Low capital intensity allows entry to market with barriers

Guinea and Australia host close to half of the world's bauxite reserves, yet Australia produces four times more and ranks as the largest producer globally at ~30%. Interestingly, Guinea produces equally high quality bauxite (>12x THA/SRx) from Tier I assets held by Alcoa and Rusal. However, infrastructure constraints in-country and the ~12,000km shipping distance remain major constraints to growth. Australia, on the other hand, benefits from first-world infrastructure (grid power, road, rail and bulk port terminals) and is allowed to piggyback off the iron ore industry, which brings with it world class bulks expertise and contractors. Indeed this shows in Bauxite Hill's modest capex figure of ~$20m capex, which visibly benefits from contract mining, crushing and barging – all potentially big capital items. In fact, given the simplicity of Bauxite Hills' operation, we see funding as the biggest hurdle, but certainly not an insurmountable one. We model ~$15m equity and the balance in debt to arrive at our 1.0x$NAV_{10\%}$ of A$0.50/sh.

Chinese Stage 1 refining driving third party bauxite demand

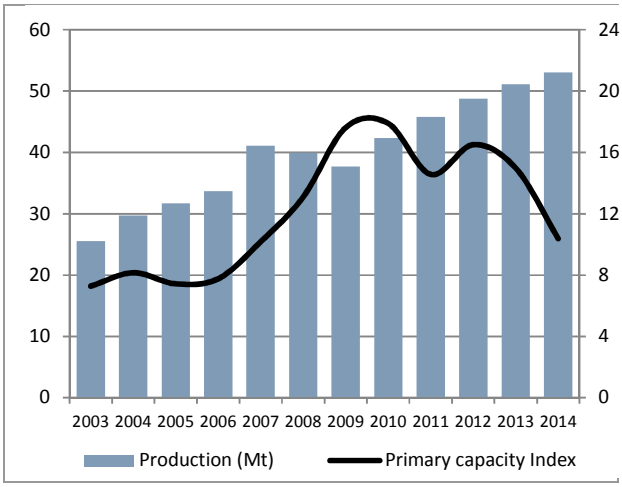
The aluminium market is dominated by vertically integrated majors that control ~80% of global output and have the best bauxite reserves globally. The majority of world-class deposits held outside of the majors are often either infrastructure constrained or in high risk geographies. Indeed it has been the emergence of Chinese third party alumina refining in China that has seen the development of third party bauxite trading with prices for low-temp bauxite rising double digits annually in the last decade. The Indonesian ban in 2014 served to highlight the supply challenges facing Chinese refiners and the constraints on its declining, high-cost reserve base. Moreover, we flag that Chinese reserves are low quality (~5x THA/SRx) with elevated levels of deleterious (i.e. TiO_2), which makes an over reliance on imported bauxite a necessity. With the Chinese adding even more Stage 1 refining capacity this year, we expect bauxite markets to tighten and offtake interest for low-capex, proximal DSO projects to intensify.

Figure 2A. Chinese bauxite imports and smelter



Source: Bloomberg

Figure 2B. Global aluminium production and capacity

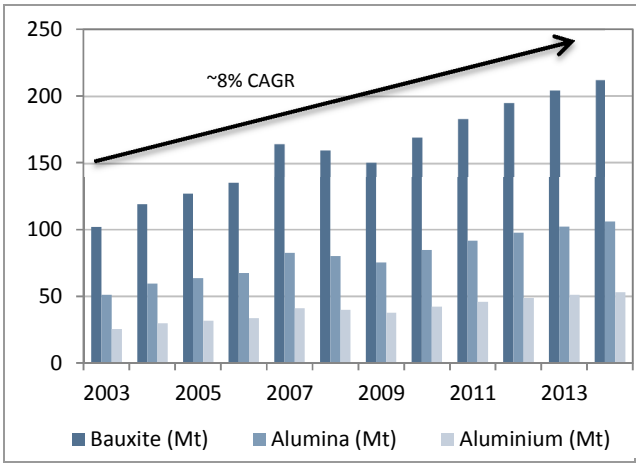


Source: International Aluminium Institute, Bloomberg

Bauxite fundamentals look very constructive

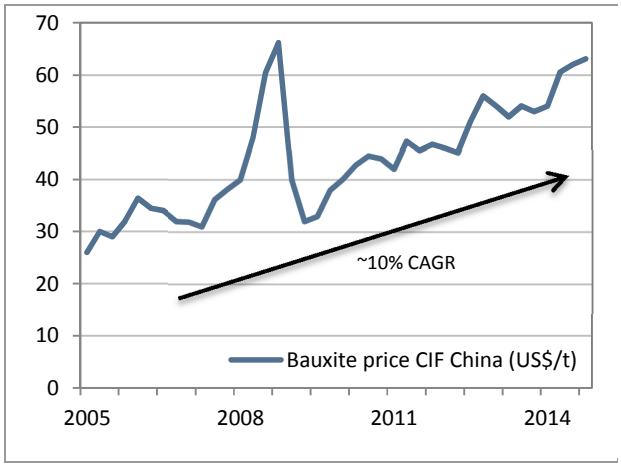
Bauxite is a key ingredient for aluminium. Since it was commercialised, demand has outpaced global GDP and is projected to grow at ~6% pa. China is where most new tonnes go with rising infrastructure investment driving double-digit demand CAGR. In OECD countries, more stringent emission rules are forcing car makers to double aluminium content to 250kg/car by 2025, but overall demand is flatter on softer GDP growth. Supply, on the other hand, is forecast to grow ~3% pa as excess capacity is absorbed. In turn, alumina demand is forecast to grow at double this rate (~30Mt by 2018) which should result in ~60-80Mt of incremental bauxite demand. Vertically integrated majors haven't yet given the greenlight to multi-billion dollar expansions at their mines to sell third party ore, and bauxite buying has been on the rise recently on the expectation Chinese inventories deplete by 2H16. The supply outlook clearly fails to measure against demand projections, which bodes well for continued double-digit price appreciation in the medium-term.

Figure 3A. Global production by product



Source: International Aluminium Institute

Figure 3B. Bauxite prices CIF China



Source: GMP, Metro Mining

Low cost bauxite exposure with M&A and expansion upside

Metro looks good value at 0.22xP/NAV, which we calculate on a post $15m spot equity raise share count. Relative to peers, Bauxite Hills offers investors exposure to high-margin, near-term bauxite production with minimal dilution and low build/capex risk. The project's break-even cost of $50/t provides good downside protection, but still allows investors to profit from a likely bauxite supply squeeze in coming years. It is evident based on recent Malaysian exports into China that producers there need >$60/t or higher to remain economic – a potential floor price. Hence, we believe the market will continue to reward Metro based on improving market fundamentals but also as and when it delivers on key milestones, namely: (i) feasibility and marketing studies, (ii) an EIA, and (iii) full permitting. In production, we believe Metro should trade in line with its bulk peers at ~1.0xP/NAV and ~3-5xEV/EBITDA, which implies a valuation of ~$150-200m (7-10x upside). Potential also exists for regional consolidation of similar, albeit earlier stage permits or more simply to double output for a ~45% lift in NAV.

Figure 4. Peer comp sheet

	Metro Mining	Australian Bauxite	Sierra Minerals	AMC Bauxite Ltd.	Alufer Mining	Queensland Bauxite	Bauxite Resources	Gulf Alumina Ltd.	Canyon Resources	Metallica Minerals	Navasota Resources
Ticker	MMI AU	ABX AU	Private	Private	Private	QBL AU	BAU AU	Private	CAY AU	MLM AU	ALU CN
Project	Bauxite Hills	Bald Hill	Sieromco	Koumbia	Bel Air	South Johnstone	Fortuna	Skardon River	Birsok	Urquhart Point	Mamou-Dalaba
Country	Australia	Australia	Sierra Leone	Guinea	Guinea	Australia	Australia	Australia	Cameroon	Australia	Guinea
Project Stage	DFS	In production	In production	BFS	BFS	Scoping Study	Scoping Study	BFS	Pre-resource	Pre-resource	Pre-resource
Reserves (Mt)	48.2	9.2*	12.5	276.3*	146.0	1.9*	34.0*	62.6	*nr*	*nr*	*nr*
Grade (Al %)	38.4	43.5*	53.1	48.1*	44.4	29.7*	32.1*	50	45.0-50.0	40.1***	-
Reactive Silica (SiO_2 %)	6.4	3.1*	3.9	1.7*	1.67	3.2*	2.1*	*nr*	1.7-4.0	4.9	-
Al-Si (reactive) ratio (x)	6.0	14.0	13.6	28.3	26.6	9.3	15.3	-	19.0	8.2	-
Throughput (Mtpa)	2.0	0.5-2.0	1.5	10.0	10.3	0.8	3.0	3.0	-	-	-
Mine life (years)	21.0	18.4**	8.3**	25.0+	14.2**	2.4**	12.0	20.9**	-	-	-
Strip ratio (x)	0.14	*nr*	*nr*	*nr*	*nr*	*nr*	*nr*	-	-	-	-
Production (Mt pa)	2.0	0.5	1.4	10.0	10.3	0.8	3.0	-	-	-	-
Al grade (%)	39.1%	40.0%	53.0%	*nr*	44.4%	*nr*	32.1%	-	-	-	-
Reactive silica (%)	6.5%	4.0%	4.0%	*nr*	1.7%	*nr*	2.1%	-	-	-	-
Process	Crush-screen	Crush-screen	Crush-screen	Crush-screen	Crush-screen	Crush-screen	Crush-screen	-	-	-	-
Product	Bauxite	Bauxite	Bauxite	Bauxite	Bauxite	Bauxite	Bauxite	-	-	-	-
Distance to Port (km)	18	100	35**	125	15	25	100	10	750	3	100
Multi-modal transport (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	*nr*	Y	Y
Road or rail (Y/N)	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N
Port available (Y/N)	Y	Y	Y	N	N	Y	Y	Y	Y	N	N
Tax (%)	30.0%	30.0%	30.0%	35.0%	35.0%	30.0%	30.0%	30.0%	35.0%	30.0%	35.0%
Royalty (%)	11.5%	7.5%**	3.0%	0.1%	0.1%	7.5%**	7.5%**	7.5%**	5.0%	7.5%**	0.1%
Other	-	-	-	-	-	-	-	-	-	-	-
Gov free carry (%)	-	-	10%	10%	10%	-	-	-	15%	-	10%
Capex (US$m)	21.0	-	*nr*	951	110	3.9	19.9	nr	*nr*	*nr*	*nr*
Capital intensity (US$/Mt pa)	10.5	-	-	95.1	10.7	4.9	6.6	-	-	-	-
Capital per tonne reserve (US$/t)	0.44	-	-	3.44	0.75	2.07	0.59	-	-	-	-
Opex (US$/t FOB)	20	30	-	14	22	26	23	-	-	-	-
Shipping (US$/t)	12	21	-	20**	20**	11	23	-	-	-	-
Premium / discount (US$/t)	(15)	*nr*	-	*nr*	*nr*	(17)**	*nr*	-	-	-	-
Landed opex CIF (US$/t)	47	51	-	34	42	54	46	-	-	-	-
Implied margin at spot (US$/t)	23	20	-	-	-	16	24	-	-	-	-
Implied margin at spot (%)	33%	28%	-	-	-	22%	35%	-	-	-	-
Project NPV (US$m)	151	*nr*	-	704^	760	*nr*	*nr*	-	-	-	-
Post-tax IRR (%)	88%	*nr*	-	28%	72%	223%	*nr*	-	-	-	-
Discount rate (%)	15%	*nr*	-	10%	12%	*nr*	*nr*	-	-	-	-
Bauxite price (US$/t)	55	*nr*	-	45	50**	53	*nr*	-	-	-	-

Source: Company data, GMP

*nr - not released; *resources; **GMP estimate; ^65% leverage; Bauxite price denotes FOB (ex-discounts)*

Initiating with a BUY rating and A$0.20 target price

Our valuation for Metro is based on a SoTP DCF valuation for Bauxite Hills, which we model in line with the PFS based on reserves and using a LT ~$70/t CIF China bauxite price. We also add for cash and $10m nominal for exploration, and deduct for overheads, which includes interest. To remain conservative, we also model a ~$15m equity raise at spot and ~$25m of debt at ~10% pa, which provides the company with ample headroom. This gives our 1.0x$NAV_{10\%}$ group valuation of A$0.50, which we ascribe a 0.4xNAV multiple to reflect the development risks ahead (i.e. capex and opex creep, permitting and build risks) to arrive at our BUY rating and A$0.20 target price.

With $4.2m in cash, Metro is funded to permitting decision, due around year end. Milestones this year are a good source of catalysts for the company, in our view, in addition to improving bauxite market fundamentals. Importantly, Bauxite Hills low breakeven price provides investors with good downside risk protection in the unlikely event the Indonesian government reverses its export ban, which we flag has been somewhat offset by Malaysian lower-quality exports. Nevertheless, to attract capital in these markets, high IRR projects with near-term production like Bauxite Hills typically get financed over the larger NPV projects with sizeable capex.

Figure 5A. SOTP valuation for MMI AU

	O/ship	US$m	NAVx	A$m	A$/sh
Bauxite Hills	100%	191	0.4	99.3	0.22
Exploration	100%	10	0.4	5.2	0.01
Cash	-	4	0.4	2.2	0.00
Equity raise	-	15	0.4	7.8	0.02
Cash from options	-	0	0.4	0.1	0.00
SG&A	-	(42)	0.4	(21.7)	(0.05)
Valuation (FD)		**179**	**-**	**93**	**0.20**

Source: GMP estimates

Figure 5B. Target price sensitivities to bauxite price

To discount rate	50	60	70	80	90
12% discount	(0.01)	0.08	0.17	0.25	0.34
10% discount	(0.01)	0.10	0.20	0.30	0.40
8% discount	(0.01)	0.12	0.24	0.36	0.48
To NAVx @ 10%	50	60	70	80	90
0.30xNAV	(0.01)	0.07	0.15	0.23	0.30
0.40xNAV	(0.01)	0.10	0.20	0.30	0.40
0.50xNAV	(0.01)	0.12	0.25	0.38	0.50

Source: GMP estimates

Catalysts

- 2H/1H16: Bauxite Hills feasibility study
- 1H16: Permits
- 2H16: Construction commences (GMPe)
- 2017: First bauxite shipment (GMPe)

Upside scenarios

Bauxite squeeze - Planned alumina supply growth in China should drive demand for third party traded bauxite, which bodes well for price appreciation medium-term. With no mega projects likely to come online, we note that a ~10% lift in bauxite prices would drive a ~30% lift in NAV.

Forex - A weaker AUD certainly benefits Metro's cost base with bauxite sold in USD. The PFS used a ~0.81 AUD/USD f-x rate, which is above the spot rate of ~0.77. Metro noted that following discussions with a major bank that it could hedge the AUD/USD rate at 0.75 over a 5-year term.

Falling oil price - Mining, barging and shipping represent ~75% of the overall cost base, which are all heavily linked to the oil price. This suggests that there is considerable scope for the BFS opex to come in much lower than the PFS, given the oil price is lower by an appreciable ~35%.

Expansion options - Bauxite Hills is easily expanded to ~4Mtpa, but management has sensibly opted for a ~2Mtpa to sidestep the big EIA and to fast track cash flow. Once in production, we would expect work on the expansion to commence which potentially lifts our NAV by ~45%.

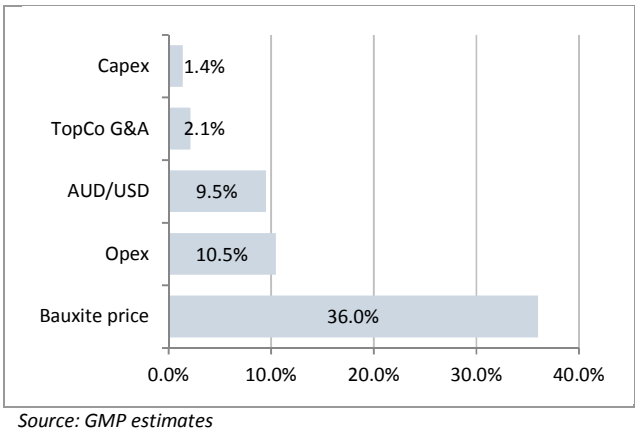
Key risks

Financing, build and capex - We view financing as the biggest hurdle. We very conservatively model 50% debt with spot equity. This leaves build / capex risk which is also somewhat mitigated by the CEO's experience having just come off a ~$650m mine build in Senegal for TiZir (MDL AU).

Bauxite price risk - Naturally Metro's earnings are tied to the bauxite price. While we remain very constructive on the medium-term fundamentals of third party-traded bauxite, we note Bauxite Hills' $50/t breakeven cost is well below the marginal cost of supply (i.e. Malaysia at $60/t).

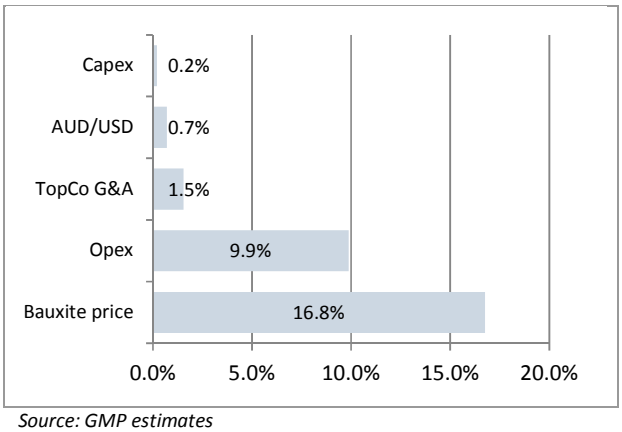
Offtake - The opaque nature and lack of precedents in the bauxite industry means predicting the potential terms of an offtake remains difficult. Risk remains around potential discounts, although Metro is in discussions with large shareholder, Xinfa and other large Chinese bauxite consumers.

Figure 6A. Impact of 10% change in inputs on NAV10%



Source: GMP estimates

Figure 6B. Impact of 10% change in inputs on 2018

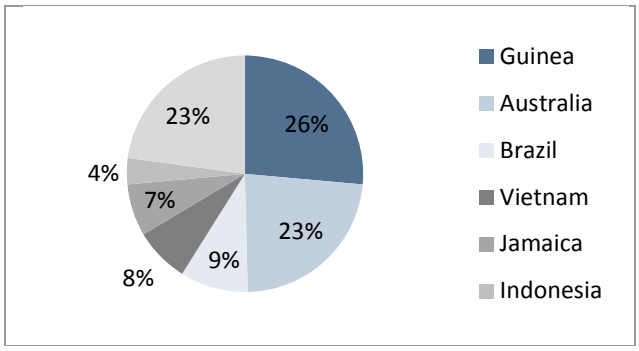


Source: GMP estimates

Bauxite 101

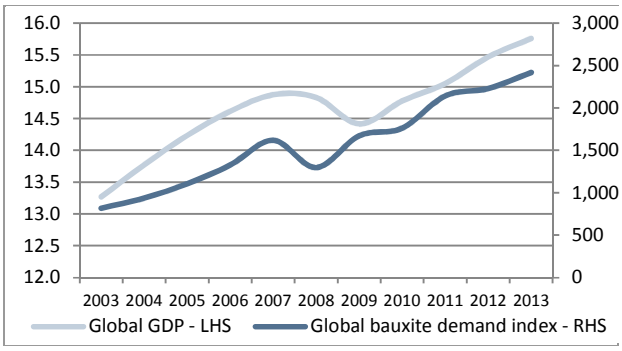
Summary: Bauxite is the primary mineral for the production of alumina, which is used to produce aluminium metal. Widely found around the world, bauxite is formed by the weathering of aluminium rich rocks into clays or laterites which are generally at surface. World reserves of bauxite stand at 29Bt with Guinea, Australia, Brazil, Vietnam and Jamaica hosting ~70%. World bauxite production is ~220-240Mt pa with the five large, vertically integrated aluminium producers controlling in excess of ~70% of the market. Seaborne (third party-traded) bauxite accounts for ~70-80Mtpa, is estimated to be worth ~$5bn and growing at a healthy ~5-6% pa. We note that China is the fastest growing consumer of third party bauxite at ~50Mtpa.

Figure 7A. Global bauxite reserves by location



Source: International Aluminium Institute

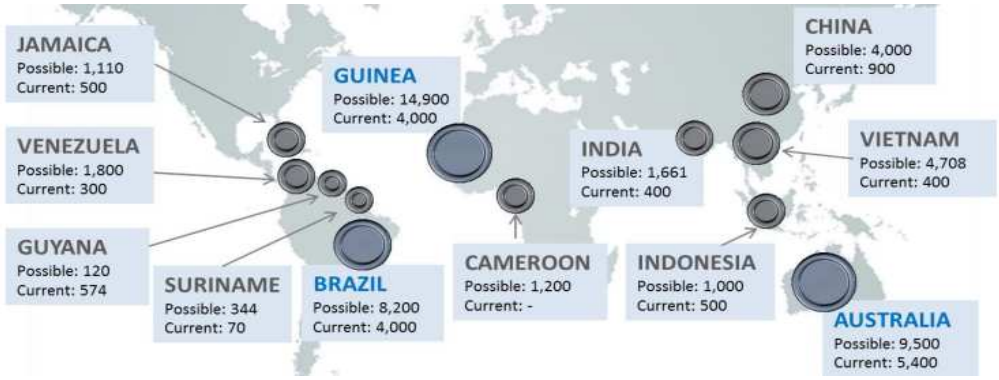
Figure 7B. GDP and bauxite demand



Source: Bloomberg

Geology: Bauxite is formed as a residual product of millions of years of chemical weathering of rich aluminium silicate rocks. While bauxite is the third most abundant element in the earth's crust, the best reserves are typically found in tropical areas where weathering has been intense enough to concentrate grades above 40-50% Al_20_3. The main three alumina minerals comprise gibbsite (Al_20H_3), which is amenable to low-temperature (~130-150°C) Stage 1 refining, and Boehmite (γ-AlO(OH)) and Diaspore (AlO(OH)), which requires more costly higher temperature (>200°C) refining. Gibbsite is the preferred mineral because it draws less power, a key cost driver for the production of alumina. Chinese Stage 1 refining capacity is built on low-temp refining.

Figure 8. Global bauxite economic reserves



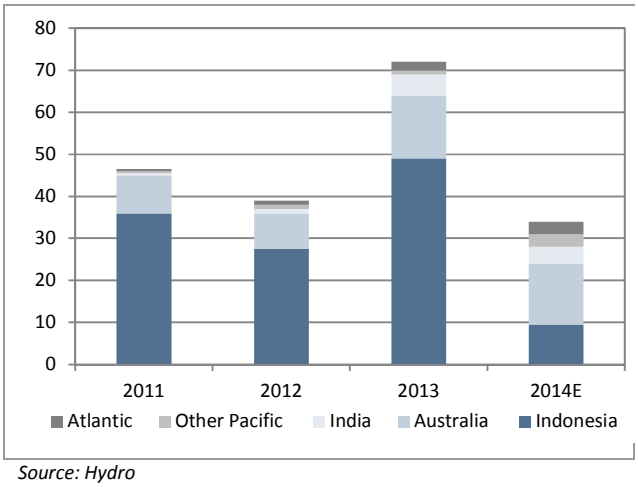
Source: Alumina Limited

Mining and processing: Bauxite forms within thin weathered horizons (blanket deposits that are typically 2-5m thick) that can be mined using open cast mining methods. However, because bauxite is a fairly low priced commodity, the majority of deposits will struggle to be economic when strip ratios exceed 4:1 in our view. Unlike other metals, bauxite is a straightforward process because most ores mined are within acceptable grades for DSO operations. Processing will comprise a simple crush and screen, and sometimes a wash. The simplicity of bauxite mining will mean project quality hinges on in-situ grade, strip, product spec but also proximity to market.

Refining: Stage 1 refining produces aluminium oxide (alumina) via the Bayer Process. This is the most commonly used method by refineries worldwide and involves four key steps: (i) digestion, (ii) clarification, (iii) precipitation, and (iv) calcination. Bauxite is typically ~30-40% of the total cost (~2-3t of bauxite is needed to produce ~1t of alumina) followed by caustic soda and power. As previously outlined, gibbsite bauxite is preferred as it can be refined at lower temperatures, which will translate into lower power draw. Stage 2 refining, entails the extraction of aluminium from its oxide via the Hall-Heroult process. This is a power intensive electrolytic process.

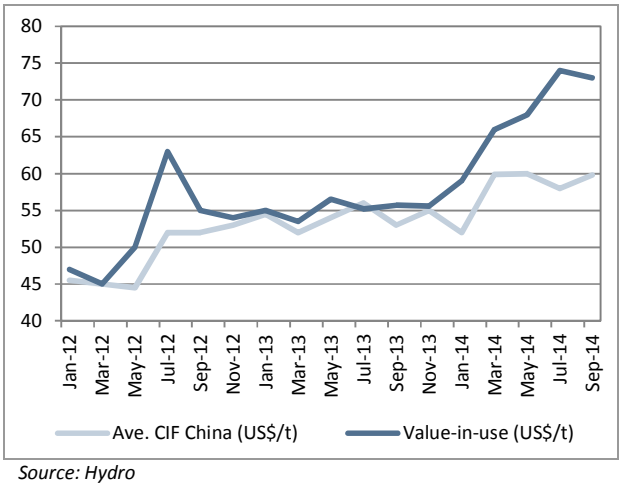
Bauxite production: World bauxite production is ~220-240Mtpa with the majority produced by integrated producers like Alcoa, Rio Tinto and Rusal. While bauxite mining is relatively simple, the barriers to entry are quite large because in the 1960s the large, vertically integrated aluminium producers pegged the majority of the world's best deposits, which meant, like iron ore, new entrants were left with infrastructure constrained deposits and weak chemistry. As a result, the emerging Chinese aluminium industry has struggled to secure high-quality, long-life deposits outside of China, which is precisely why major merchant refiners through JVs / partnerships are now actively working to develop new bauxite sources in Fiji, Australia, Guinea, Jamaica and Brazil.

Figure 9A. China import volumes in decline



Source: Hydro

Figure 9B. Value-in-use bauxite price on the rise



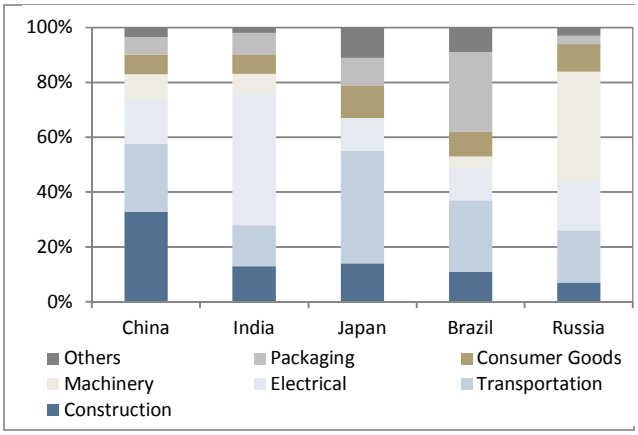
Source: Hydro

The emergence of Chinese merchant Stage 1 refining capacity in the last decade has driven double-digit demand growth for third party-traded bauxite ore, which is a ~70-80Mtpa market worth ~$5bn. Previously, alumina refinery was controlled by the majors. Today China imports ~50Mtpa of mostly low-temp bauxite. Indonesia was previously the supplier of choice with pre-ban production of ~40Mtpa. However since the export ban in 2014, Indonesian production has curtailed with a supply gap emerging and forecast to widen to ~11Mt by 2019. While Malaysian

production has more than trebled to ~10Mtpa, quality and moisture have been an issue. Moreover, we note that the majors have no big plans for sizeable expansions at their mines.

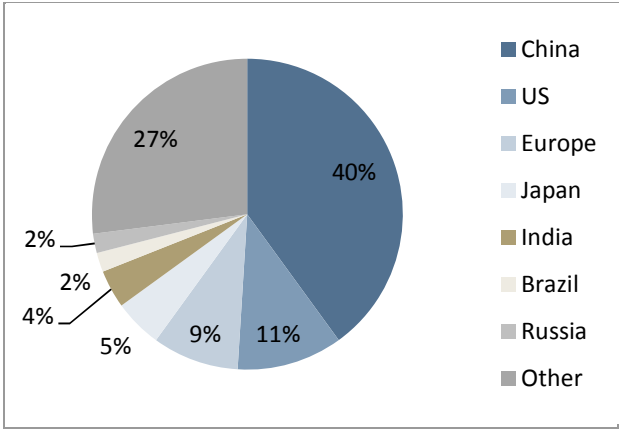
Demand drivers: Unlike bulks such as iron ore and coal, aluminium metal is a mid-to-late cycle commodity, so is more CPI and GDP growth led vs. industrial output. Aluminium demand is ~55Mt pa (vs. ~60Mt capacity) worth ~$17b in total with the International Aluminium Institute estimating global inventories at ~40 days (~2.4Mt). Aluminium is used for its light weight and conductive properties, and thus used mostly in construction, electrical and transport applications. Demand for each application will typically vary depending on where each economy sits in its development cycle (investment vs. consumption). For instance, Chinese government infrastructure spend and private investment can often trigger price moves in aluminium.

Figure 10A. 2014 downstream use by industry



Source: Bloomberg

Figure 10B. 2013 downstream consumption by region



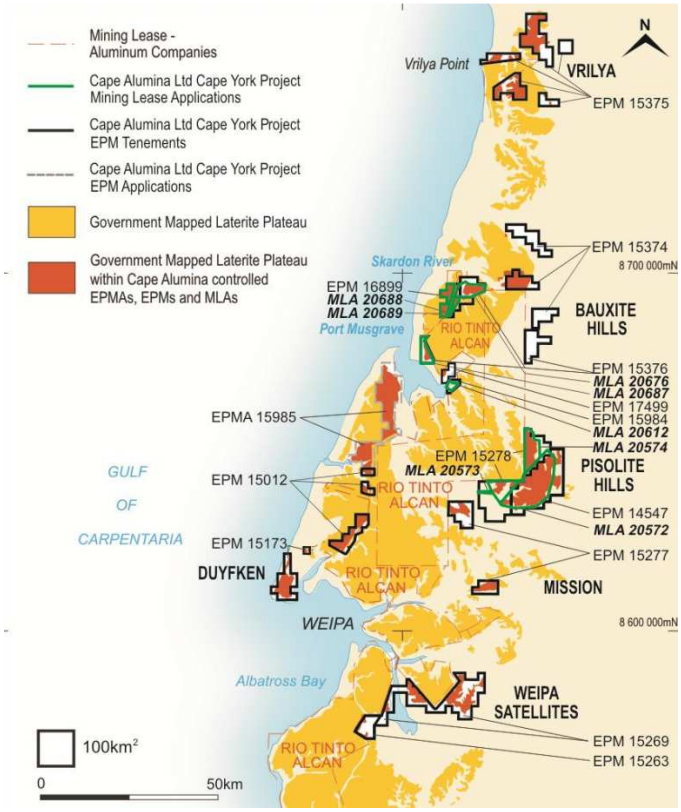
Source: International Aluminium Institute

We expect solid, broad-based demand growth across all segments and regions, although European macro uncertainty prevails. Specifically we expect strong demand growth from transportation - accounts for ~30% of global demand – on rising automotive vehicle production and aluminium content in cars, as well as growth in other transport modes (i.e. railway). This coupled with continued urbanisation in emerging economies and the shift away from copper in the electrical segment should sustain aggregate growth at ~4-6% CAGR in the medium-term. In absolute terms, this should see current aluminium demand grow by ~15Mtpa to ~70Mt by 2019. Volumetrically the implications for bauxite are positive as this growth implies bauxite production needs to grow 30% by ~60-75Mt or ~12-15Mt pa.

Company overview

Metro Mining is an ASX-listed, Australian-focussed bauxite developer that emerged from Metro Coal's takeover of Cape Alumina in 2H14. Previously, Metro was focussed on developing coal projects in East Queensland. It held an extensive portfolio of early stage projects with ~4.4Bt in resource. The collapse in coal prices last year saw Metro put these projects on the backburner and shift its focus to developing Australian bauxite projects, which the takeover of Cape Alumina facilitated. The takeover was made possible because Metro had ~A$8m in cash in tough equity markets, whereas Cape Alumina was low on treasury and dealt a significant blow by the Wild Rivers legislation, which saw its Pisolite Hills development project sterilised by the government.

Figure 11. Metro Mining bauxite development projects in Cape York



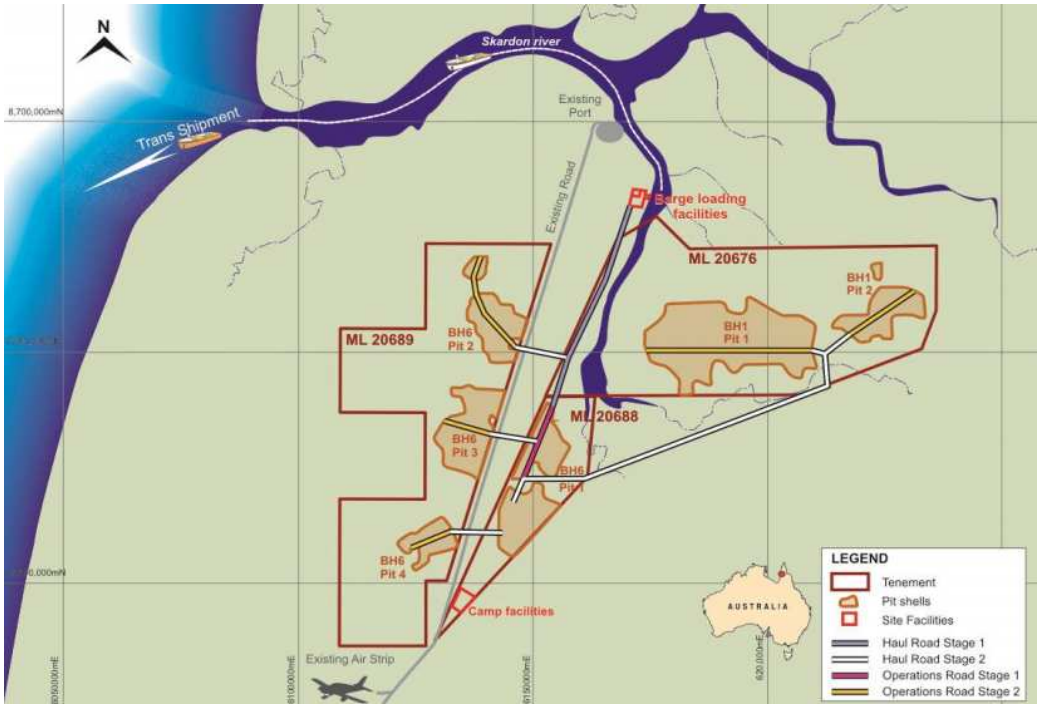
Source: Cape Alumina and Metro Mining

In addition to Pisolite Hills, Cape Alumina also owned 21 tenements that straddled Rio Tinto's (Alcan) world-class Weipa mine in Cape York. Rather than fight legislation, Metro has sensibly opted to focus on Bauxite Hills, which was acquired with a ~60Mt resource that was believed to be amenable to a simple DSO operation, in an area that has no conflicting land use issues. With the takeover only closing in 4Q14, the company has moved exceptionally quickly, appointing ex-TiZir (Eramet-MDL JV) GM, Simon Finnis as CEO and completing a PFS in 1Q14, which proved an economic ~2Mtpa DSO operation. Metro reported ~A$6m in cash as of December 2014, which should see the company funded to permitting.

Bauxite Hills

The wholly owned Bauxite Hills project is the company's flagship development asset. It is located ~95km north of Weipa in Cape York Queensland, in Australia. The project sits on well-known bauxite plateaus, where Rio Tinto (Alcan) operates its Weipa mining operation which itself boasts a ~3Bt resource. Weipa alone produces ~26Mt pa of bauxite, which is an appreciable ~30% of Australian output and ~10% of global supply. Bauxite Hills hosts trihydrate bauxite, which is more suited to Chinese low-temp refineries that have been configured to treat Indonesian type bauxite DSO material. Metro completed a PFS for Bauxite Hills that outlined an economic DSO open pit operation with a simple 20km haul and barge and is targeting first production in 2H16.

Figure 12. Conceptual site layout



Source: Cape Alumina and Metro Mining

Resources and reserves

Resources are hosted within two main deposits in close proximity to one another - BH6 and BH1. The deposits are roughly of equal size, hosting a total of 54Mt with recent drilling showing good reserve conversion – 48Mt at 50% Al_20_3 with 11% SiO_2. On payable metrics, trihydrate available alumina (THA) of ~38% with reactive silica (SRx) of ~6.4% supports a THA/SRx ratio of ~6x. We note that end-users only pay for recoverable gibbsite (THA) that is amenable to the Bayer Process (low-temp). While bauxite quality was broadly similar to the specification outlined in the scoping study, reserve tonnes came in ~6Mt higher, which extends the project's life by three years to ~24 years. Economic inferred material could also extend reserves to ~27 years but are largely NAV neutral. Reserves were calculated on a wet basis (10% moisture) and THA/SRx cut-off ratio of >5x.

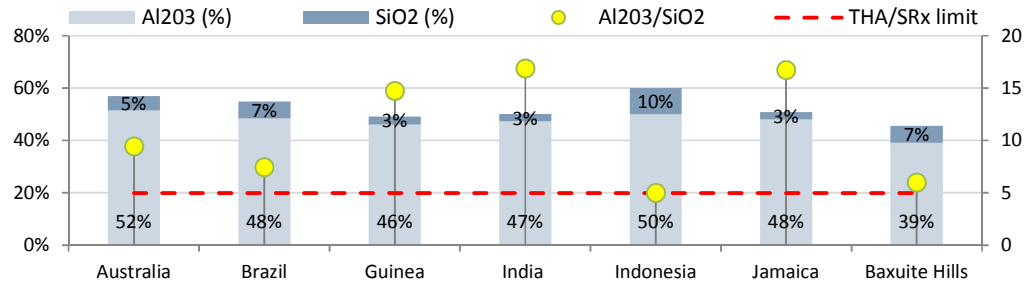
Figure 13. Metro Mining bauxite development projects in Cape York

Area	Category	DSO[2] Tonnes (Mt)[1]	DSO Bauxite Qualities (Dry Basis) Total Al_2O_3 (%)	THA[3] (%)	Total SiO_2 (%)	RxSi[4] (%)	THA/RxSi (%)
BH1 & BH6	Measured Resource	41.8	51.0	39.2	11.0	6.1	6.4
BH1 & BH6	Indicated Resource	8.3	49.3	37.1	14.0	6.8	5.5
BH1 & BH6	Inferred Resource	3.4	48.4	35.9	14.8	7.2	5.0
TOTAL RESOURCE		53.6	50.6	38.7	11.7	6.3	6.2

Source: Metro Mining

The THA/SRx ratio determines bauxite quality, because high reactive silica will lower aluminium recoveries and have a direct bearing on how much caustic soda is used in the conversion process to alumina. Other deleterious elements include TiO_2 and P_2O_5, which rob sodium. Alumina refineries typically won't buy bauxite with a THA/SRx ratio lower than ~5x because the cost of conversion outweighs the quality discount buyers can hope to recoup. Bauxite Hills' resource is above 5x, but importantly envisages mining ~6x THA/SRx quality ore over its ~24-year mine life.

Figure 14. Bauxite quality comparable



Source: CRU, GMP; Note that resources are shown with total aluminium content vs THA

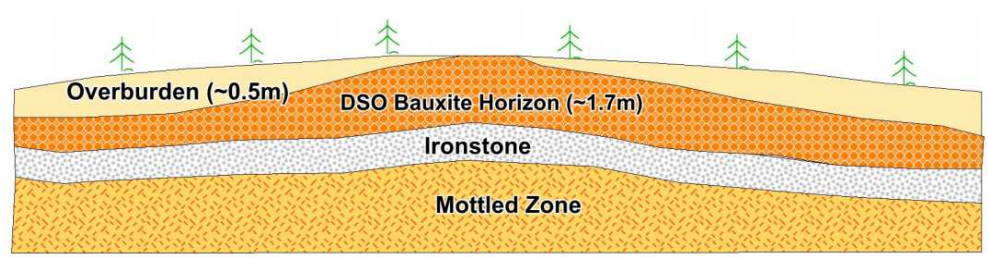
Bauxite pricing and adjustments

Beyond the available trihydrate aluminium content in the ore and THA/SRx ratio, buyers will make various price adjustments. Ultimately pricing is dictated by market forces but calculated on a value-in-use basis, which is the cost to convert bauxite to alumina. On average, refineries use ~2t of bauxite to produce ~1t of alumina, which makes it a key cost driver at ~40%. The second biggest cost is power at ~15GJ/t for alumina, which equates to ~$120/t, followed by consumables such as caustic soda. Buyers make adjustments on THA and SRx delivered vs a benchmark spec (~39% THA and ~6.7% SRx) and moisture is deducted. Moisture is ~10% at Bauxite Hills.

Mining and processing – Simple, free dig, low strip DSO mine

Metro plans to mine both plateaus (BH1 and BH6) at a ~2Mtpa run-rate over a ~24-year life. To fast track production, throughput has been capped to avoid a more laborious EIA and permitting process, which Metro can sidestep given the size of the mine classifies it as a "small scale mine". The project envisages conventional open pit mining methods in free dig ore with minimal overburden resulting in a negligible strip ratio of 0.2:1 over life of mine. Bauxite ore will then be crushed and screened to remove gangue material and waste ore will be backfilled. The product will then be barged and loaded onto a bulk carrier at sea as direct ship ore (DSO).

Figure 15. Schematic bauxite profile for BH6 plateau

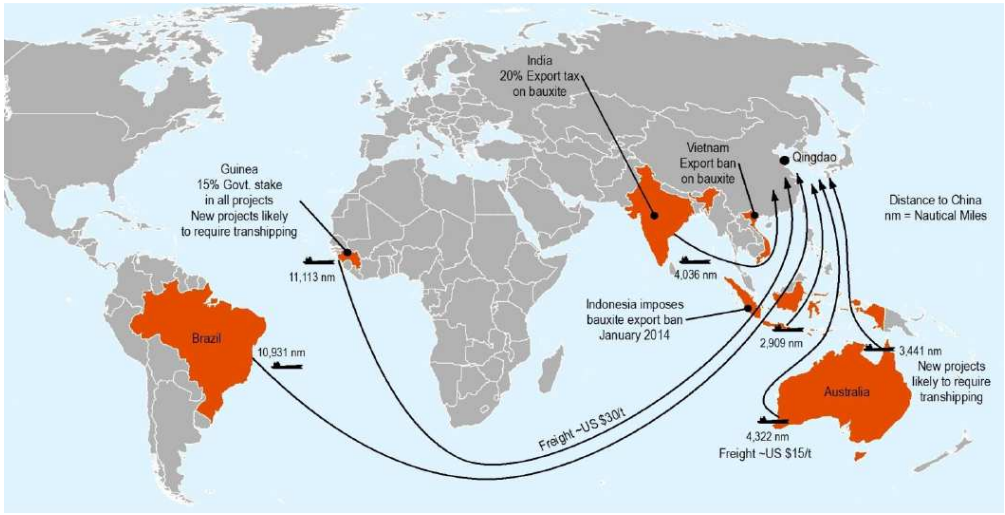


Source: Metro Mining

Transportation – Barge and freight to China on bulk carriers

Bauxite Hills is proximal to Skardon River, where there is a loading facility that was previously used by a nearby kaolin mine, which is now owned by Gulf Alumina - a private company that is estimated to have ~45Mt of DSO. The Skardon River is deep enough to run barges with a payload capacity of ~2kt to the coast where product is transhipped onto bulk carrier vessels (>70kt) with well-established routes into China. While there is scope to share the river port loading facility with Gulf Alumina, Metro has played it safe by assuming it will build and operate its own facility. The total distance from plant to vessel is ~30km (~10km road and ~20km by barge).

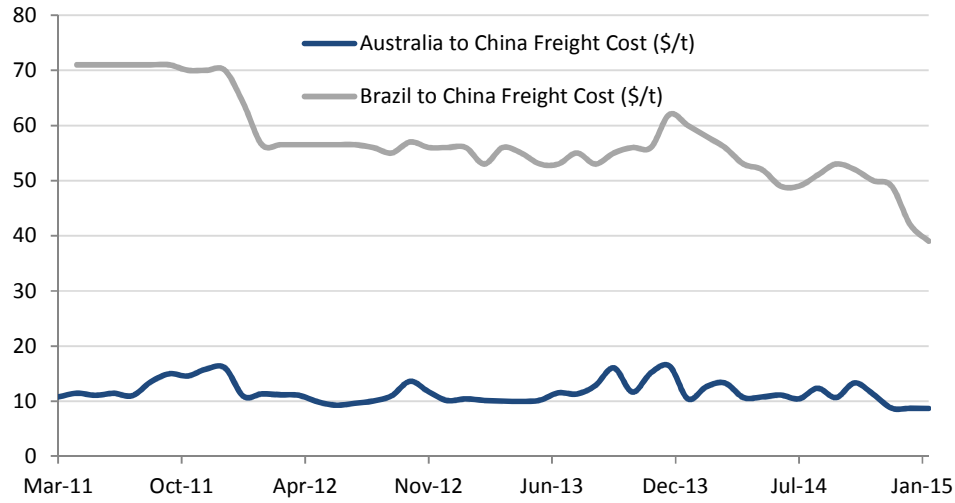
Figure 16. Cape York shipping advantage to China



Source: Bauxite resources Limited (2012) – Shipping rates are now ~$8-12/t from Cape York to China

Bauxite is a fairly low value bulk at ~$70/t, which makes shipping an important cost. China is the key market for third party tradable bauxite. This means shipping costs from exporting countries like Jamaica, Brazil and Guinea can be as high as ~$30-40/t, an appreciable ~40% of spot prices. Despite hosting some of the world's largest and best quality reserves, on a value-in-use basis, Guinean bauxite is less cost effective than Indonesian, Malaysian, Indian and Australian bauxite, which have a ~$20/t comparative sea freight advantage. With Indonesian bauxite out of the market, we think low-capex Australian and Malaysian projects will prevail over ROW deposits. Spot shipping costs from Cape York to China is ~$8-10/t - we model ~$12/t based on LT prices.

Figure 17. Historic Cape York to China vs Brazil to China freight costs



Source: Bloomberg

Permitting – Small mining means permitting de-risked and Wild Rivers not an issue

Permitting risk in Queensland is perceived to be high by the market following the Wild Rivers Act, which passed in 2005, and was extended to include Cape Alumina's projects in 2010. The extension placed a 500m buffer zone around the Wenlock River and prevented the development of Pisolite Hills, which subsequently led to the demise of Cape Alumina (previous owners). Pisolite Hills envisaged a ~7.5Mtpa DSO mine with a ~14-year life with A$25/t FOB costs for ~A$400m capex. However, with the project on hold now, Metro has ostensibly opted to develop Bauxite Hills, which has support from traditional owners, zero land use issues and is well outside the buffer zone. While there are appeals against the Wild Rivers, we carry no value for Pisolite Hills.

The state of Queensland allows small-scale mines to operate without an environmental authority (EA) provided they qualify certain criteria. This is aimed at cutting the red-tape for small scale miners and significantly reduces the cost and time needed to satisfy the Environmental Protection Act (EPA 1994), with which all miners must still comply. Bauxite Hills at ~2Mtpa qualifies as a small scale mine allowing Metro to side step a costly and time consuming big EIA. The area is also uninhabited which should facilitate negotiating land tenure. With environmental studies and native title negotiations well underway, Metro expect EA approval in 4Q15.

Timetable – Moving quickly up the development curve, first production in 2H16

The company capitalised on previous work completed by Cape Alumina, allowing it to publish a PFS for Bauxite Hills in 1Q15 in record time. Work on the BFS is underway with completion targeted around late 3Q, early 4Q. In parallel, environmental studies have commenced, specifically flora and fauna studies during the wet season, which is typically between January and March. Notably, Metro doesn't expect to mine during these months but will plan to build stockpiles to smooth sales. With environmental approvals on track for 4Q, Metro has given itself two quarters to finalise financing. Conservatively assuming a 12-month build implies first production in 1Q17, although potential exists for a quicker build given the simplicity of the mine.

PFS economics robust – Low capex with exceptional returns at spot bauxite prices

The PFS outlined a ~2Mtpa (wet) bauxite DSO operation over a ~21-year mine life for ~A$27m (~$20m). Capex has been minimised by contracting out where possible, which is feasible in Australia in our view. To minimise dilution, Metro aims to save on mining equipment and the barges, which would otherwise be large capital items, and will manage the build itself given the simplicity of the operation, which we flag comprises a simple crush and screen plant. FOB costs were estimated at ~A$27/t (~$20/t), which drives a breakeven cost of ~$45/t CIF China vs. ~$70/t spot bauxite at asset level or $18/t EBITDA. Using a 15% discount rate and $70/t bauxite CIF price, Metro estimated the project NPV and IRR at A$197m and 88%, respectively.

Figure 18A. Bauxite Hills PFS economics

	PFS
NPV15% real after tax (A$m)	197
IRR (%)	88%
Mine life (years)	21
2016 construction capex (A$m)	27.4
LOM sustain. capex (A$m)	18.1
Opex (A$/t FOB)	26.7
Ave. annual NPAT (A$m)	37.9
Average revenue (A$/t FOB)	55.3
Average cash margin (A$/t FOB)	28.6

Source: Metro Mining – note currency is AUD

Figure 18B. Bauxite Hills opex breakdown

	PFS
Mining cost to ROM stockpile (A$/t)	3.03
Crush load and barge costs (A$/t)	10.50
Off mine costs (inc. marketing) (A$/t)	6.80
Total site and overhead costs (A$/t)	**20.33**
Royalties (A$/t)	6.36
Total cost to FOB inc. royalties (A$/t)	**26.69**

Source: Metro Mining – note costs are in AUD

Valuation - $191m project $NAV_{10\%}$ and 90% post-tax IRR

Our model for Bauxite Hills is broadly similar to the PFS in terms of capex and opex, but we factor for the reserve upgrade which supports a ~24 year mine life at ~2Mtpa. Capex looks modest at just ~$20m, which we view as very achievable given the Australian dollar and oil price are both weaker since the PFS was published in 1Q15. To remain conservative, we assume first bauxite production in 4Q16 and ramp-up taking six months. We think this is realistic given the simplicity of the mine and management experience. Modelling capex 10% higher but with sustaining capex in line (PFS) gives our breakeven cost at asset level of $47/t or ~$50/t with interest and corporate G&A. To factor for build financing, we also model ~A$30m in debt and A$15m in equity at spot.

CM Group undertook a marketing study on Metro's bauxite, confirming that there is demand for Bauxite Hills' product in China. The study also outlined the likely discount / pricing formula. We simplistically, and quite possibly over punitively, model a $15/t discount to factor in addition to pricing adjustments for fluctuations over the agreed baseline specification (39.3% THA and 6.7% SRx – key price drivers). This means Metro stands to benefit or lose for every percentage point it can produce above or below target specification. We also model no mining or shipments in 1Q on account of the wet season and assume moisture at ~10%. Finally, we also assume a ~$10m working capital build-up to arrive at our project $NPV_{10\%}$ of $191m and post-tax IRR of ~90%.

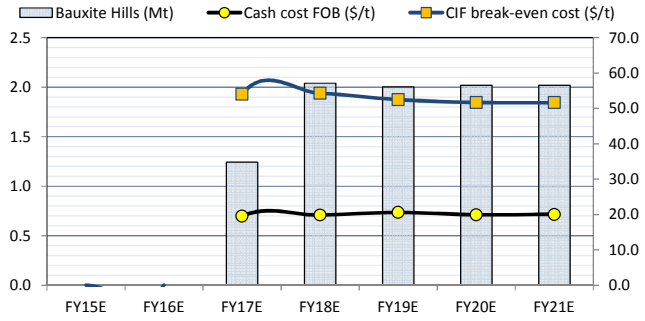
Directors and management

- **Chairman: Stephen Everett –** has over 40 years' experience in the resources and construction space. He was formerly Chairman of BeMaX Resources NL, Australian Solomons Gold and IronRidge and is currently Chairman of Agrimin Limited.
- **Chief Executive Officer: Simon Finnis –** has over 28 years of experience in the mining industry. His previous roles included Operations Manager for the Pooncarie Mineral Sands Project, Gold Ridge Mine in the Solomon Islands and CEO of Grade Cote (TiZir).
- **Chief Financial Officer: Scott Waddell –** has resources experience gained over nine years with Anglo Coal and eight years with Rio Tinto Alcan (RTA) in a variety of senior roles across multiple sites.
- **Project Director: Mike O'Brien –** has a 35-year mining and minerals background including more than 25 years of experience with multinational companies such as Shell Coal and Anglo coal (subsidiary of Anglo American).
- **Independent Non-executive Director: Philip Hennessy –** has over 30 years of corporate experience in all aspects of corporate financing across a variety of industries including construction, manufacturing and mining.
- **Independent Non-executive Director: Lindsay Ward –** has over 25 years industry experience having held executive positions in mining, exploration and related infrastructure companies. He is currently CEO of the Tasmanian Gas Pipeline.
- **Non-executive Director: Jijun Liu –** is the Managing Director of the China Xinfa Group which controls one of the largest alumina-aluminium enterprises in China. He is also a member of various government committees.
- **Non-executive Director: Dongping Wang –** has held senior management roles within the Chinese coal industry for 30 years.
- **Independent Non-Executive Director: George Lloyd –** has over 30 years' resource industry experience including senior executive roles of listed and unlisted companies with interests in minerals, energy and corporate finance.

Ticker: MMI AU	Share price	A$0.09/sh	Stock rating:	BUY	Implied return:	134%
Analyst: Filipe Martins	Market cap	A$25m	Target price:	A$0.20/sh	Market P/NAV	0.22x

Year to June					
Ratio analysis	**FY14A**	**FY15E**	**FY16E**	**FY17E**	**FY18E**
Average shares outstanding (m)	208.9	288.7	288.7	288.7	288.7
EPS ($/sh)	(0.01)	(0.01)	(0.01)	0.05	0.09
CFPS before working cap ($/sh)	(0.00)	(0.01)	(0.01)	0.05	0.09
FCF yield (%)	-	-	-	-	1.30
PE (adj.), x	-	-	-	0.0	0.0
P/CF, x	-	-	-	0.0	0.0
EV/EBITDA, x	-	-	-	1.4	0.1
EBIT margin, %	-	-	-	36%	44%
ROIC (EBIT), %	-	-	-	29%	61%
Income statement (yr to Jun)	**FY14A**	**FY15E**	**FY16E**	**FY17E**	**FY18E**
Revenue (A$m)	0.3	0.7	-	59.2	106.3
COGS (A$m)	0.1	-	-	(25.4)	(40.8)
Gross Profit (A$m)	**0.4**	**0.7**	**-**	**33.8**	**65.5**
Admin expense (A$m)	(1.9)	(3.1)	(4.0)	(5.0)	(5.0)
Impairments(A$m)	(15.4)	-	-	-	-
Other (A$m)	(1.3)	(0.3)	-	26.5	51.6
PBIT (A$m)	**(18.6)**	**(3.4)**	**(4.0)**	**21.5**	**46.6**
Interest expense (A$m)	0.3	0.2	(0.2)	(2.5)	(2.4)
Tax (A$m)	0.6	-	-	-	(11.0)
PAT (A$m)	**(17.7)**	**(3.2)**	**(4.2)**	**19.0**	**33.2**
F-x & minorities (A$m)	0.1	0.3	-	-	-
Attrib. net income (A$m)	**(17.6)**	**(2.9)**	**(4.2)**	**19.0**	**33.2**
EBITDA (A$m)	*(1.3)*	*(3.3)*	*(4.0)*	*22.0*	*48.3*
Cash flow statement (yr to Jun)	**FY14A**	**FY15E**	**FY16E**	**FY17E**	**FY18E**
(Loss) / profit before tax (A$m)	0.5	(3.4)	(4.0)	21.5	46.6
Depreciation (A$m)	-	0.0	-	0.5	1.7
Changes in working capital (A$m)	-	0.1	-	(10.2)	-
Other (A$m)	(1.6)	1.2	(0.2)	(12.2)	(11.7)
CFO (A$m)	**(1.1)**	**(2.1)**	**(4.2)**	**9.3**	**34.9**
PP&E (A$m)	(0.0)	(2.0)	(18.0)	(17.1)	(3.1)
Exploaration (A$m)	(2.4)	-	-	-	-
Other (A$m)	(0.1)	-	-	-	-
CFI (A$m)	**(2.5)**	**(2.0)**	**(18.0)**	**(17.1)**	**(3.1)**
Proceeds from share issue (A$m)	-	-	7.1	7.1	-
Net change in borrowing (A$m)	-	-	20.0	10.0	(30.0)
Other (A$m)	-	-	-	-	-
CFF (A$m)	**-**	**-**	**27.1**	**17.1**	**(30.0)**
Net increase in cash (A$m)	(3.6)	(4.1)	5.0	9.3	1.8
Effect of f-x on cash (A$m)	-	-	-	-	-
Cash at end of period (A$m)	**7.5**	**5.5**	**6.5**	**15.8**	**17.6**
Balance sheet (yr to Jun)	**FY14A**	**FY15E**	**FY16E**	**FY17E**	**FY18E**
PP&E (A$m)	9.5	10.2	30.2	46.8	48.2
Trade & AR (A$m)	0.1	0.4	0.4	12.4	12.4
Inventory (A$m)	0.0	-	-	1.0	1.0
Cash (A$m)	7.5	5.5	6.5	15.8	17.6
Other (A$m)	0.5	0.5	0.5	0.5	0.5
Total assets (A$m)	**17.6**	**16.6**	**37.6**	**76.5**	**79.7**
AP (A$m)	0.3	0.5	0.5	3.3	3.3
Debt (A$m)	-	-	20.0	30.0	-
Provisions (A$m)	0.1	0.1	0.1	0.1	0.1
Other (A$m)	-	-	-	-	-
Total liabilities (A$m)	**0.4**	**0.6**	**20.6**	**33.4**	**3.4**
Shareholders equity (A$m)	16.6	16.0	17.0	43.1	76.3
Liabilities + equity (A$m)	**17.6**	**16.6**	**37.6**	**76.5**	**79.7**

Year to June					
Input costs	**FY14A**	**FY15E**	**FY16E**	**FY17E**	**FY18E**
Bauxite Price CIF China ($/t)	65	68	70	70	70
Bauxite Hill discount ($/t)	15	15	15	15	15
Aus to China shipping ($/t)	16	14	12	12	12
AUS/USD (f-x rate)	1.15	1.24	1.30	1.30	1.30
Other data					
Basic shares (m)	288.7			12M high:	A$0.10/sh
Fully diluted shares (m)	467.2			12M low:	A$0.02/sh
Resource / Reserve	**Mt**	**Al_2O_3 (%)**	**SiO_2 (%)**	**SRx**	**THA/SRx**
Reserves (P&P)	12	49.2	14.8	7.4	5
Resource (M&I + Inf)	62	50.0	12.3	7.1	5
Production (100% basis)	**FY14A**	**FY15E**	**FY16E**	**FY17E**	**FY18E**
Bauxite DSO production (Mt)	-	-	-	1.24	2.04
Al2O3 content (%)	-	-	-	38.5	39.8
SiO2 content (%)	-	-	-	7.2	6.1
THA/RxSi (x)	-	-	-	5.4	6.5
Cash cost ($/t inc royalties)	-	-	-	19.5	19.8
All-in breakeven cost (US$/t)	-	-	-	54.1	54.3



SOTP valuation					
	O/ship	**US$m**	**NAVx**	**A$m**	**A$/sh**
Bauxite Hills	100%	191	0.40	99	0.21
Exploration	100%	10	0.40	5	0.01
Cash	-	4	0.40	2	0.00
Equity raise	-	15	0.40	8	0.02
Cash from options	-	0	0.40	0	0.00
SG&A and central	-	(42)	0.40	(22)	(0.05)
Valuation (FD)		**179**		**93**	**0.20**

1.0xNAV evolution					
	2015	2016	2017	2018	2019
1xNAV + cummulative cash	0.50	0.64	0.77	0.96	1.05

Valuation sensitivities (A$/sh) to LT Bauxite Price CIF China					
To discount rate	50	60	70	80	90
12% discount	(0.01)	0.08	0.17	0.25	0.34
10% discount	(0.01)	0.10	0.20	0.30	0.40
8% discount	(0.01)	0.12	0.24	0.36	0.48
To NAVx @ 10%	50	60	70	80	90
0.30xNAV	(0.01)	0.07	0.15	0.23	0.30
0.40xNAV	(0.01)	0.10	0.20	0.30	0.40
0.50xNAV	(0.01)	0.12	0.25	0.38	0.50

Source: company data, GMP

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