

AUSTRALIA

Macquarie Battery Material coverage

Company	Code	Recommendation	Target price
Mineral Resources	MIN	Outperform	\$14.51
Orocobre	ORE	Neutral	\$3.17
Galaxy Resources	GXY	Neutral	\$0.46
Neometals	NMT	Outperform	\$0.40
Pilbara Minerals	PLS	Underperform	\$0.38
Altura Mining	AJM	Underperform	\$0.14
Syrah Resources	SYR	Outperform	\$3.60
Magnis Resources	MNS	Outperform	\$1.05
CleanTeq	CLQ	Outperform	\$1.50

Source: Company data, Macquarie Research, April 2017

Changes to our recommendations and target prices

Company	Code	Recommendation		Target price	
		Old	New	Old	New
Orocobre	ORE	N	N	3.17	3.17
Galaxy Resources	GXY	UP	N	0.46	0.46
Pilbara Minerals	PLS	UP	UP	0.50	0.38
Altura Mining	AJM	UP	UP	0.14	0.14
Syrah Resources	SYR	OP	OP	4.20	3.50
Magnis Resources	MNS	OP	OP	1.20	1.05

Source: Company data, Macquarie Research, April 2017

12 April 2017

Macquarie Securities (Australia) Limited

Australian Battery Materials

Supply tide begins to turn

Event

- We review our battery sector coverage universe ahead of what we believe is a supply side inflection point. We transfer coverage of AJM to Ben Crowley.

Impact

- **Lithium – hard rock mines coming online.** Australia's two new spodumene mines are at or very close to their nameplate production rates, and Neometals—the minority partner in the Mt Marion lithium project—has decided it is an opportune time to cash out of its holding. But the spodumene market is in still short supply, at least in the near term. Adding to the situation, achieving product specifications for the miners appears to have been more challenging than we had anticipated. Consequently spodumene pricing has been stronger than we had expected, although we continue to stress that we still see this as a short-term phenomenon.
- **Large producers to take control.** We expect a more orderly ramp-up from the ex-China market, led by the big three—Albemarle (ALB US, US\$106.03, Outperform, TP: US\$110.00, Cooley May), SQM and FMC—with a goal of establishing a stable, long-term industry. Expansion of Greenbushes is a key plank of this strategy for ALB. Consequently we maintain our view that from here on the pressure should begin to come out of the market. While we think pricing will soon pass its peak, in the immediate term we still expect there to be beneficiaries of high prices and upgrade GXY to **Neutral**.
- **Brines responding, albeit slowly.** Brine production is also starting to respond although ramp-up has been hampered by both technical and bureaucratic challenges. Both SQM and ALB have increased volume by ~30%. A key brake on ALB's progress has been the protracted negotiation of its position with the Chilean government. This has recently been resolved but with some significant concessions. As has been well documented, ORE also struggled in 2016 losing a good deal of its market shine.
- **Graphite – Balama on the horizon.** As always the outlook for the graphite sector is more opaque. Syrah Resources is well advanced with the construction of Balama but its battery strategy remains 'broad brush'.

Outlook

- **Upgrading GXY but prefer CLQ for a genuine supply shortfall.** We remain broadly negative on the lithium sector. Despite some delays we still see significant supply coming online in the near term. Expansions in conversion capacity from the largest player (ALB/Tianqi/Ganfeng) are covered by concurrent expansion of upstream assets, principally Greenbushes. We upgrade GXY to Neutral given it has now secured Mt Cattlin's position as an 'independent producer'. In the graphite space we remain positive on SYR and MNS but have reduced our graphite price outlook and note that both companies have considerable work to do to realise their battery anode ambitions. One sector of the battery supply chain where we believe a significant and likely sustained supply shortfall exists is cobalt. We point to our recent initiation on CleanTeq, which plans to produce nickel and cobalt sulphates for the battery market using its proprietary Clean-iX® technology.

Supply tide begins to turn

- The ASX-listed lithium and graphite space, in our view, is approaching an interesting inflection point with substantial new supply of both lithium and graphite on the horizon. In lithium Australia’s two new spodumene mines are at or very close to their nameplate production rates, and Neometals—the minority partner in the Mt Marion lithium project—has decided it is an opportune time to cash out of its holding.

Fig 1 Macquarie ASX-listed battery materials coverage universe

Company	Code	Sector	Market Cap (\$m)	Analyst	Recommendation	Price	Target Price	TSR
Mineral Resources	MIN	Lithium	2,136	Andrew Wackett	Outperform	\$11.57	\$14.51	20%
Orocobre	ORE	Lithium	623	Andrew Hodge	Neutral	\$2.89	\$3.17	9%
Galaxy Resources	GXY	Lithium	919	Ben Crowley	Neutral	\$0.42	\$0.46	9%
Neometals	NMT	Lithium	186	Ben Crowley	Outperform	\$0.32	\$0.40	19%
Pilbara Minerals	PLS	Lithium	530	Ben Crowley	Underperform	\$0.40	\$0.38	-7%
Altura Mining	AJM	Lithium	223	Ben Crowley	Underperform	\$0.14	\$0.14	0%
Syrah Resources	SYR	Graphite	718	Ben Crowley	Outperform	\$2.69	\$3.60	25%
Magnis Resources	MNS	Graphite	302	Ben Crowley	Outperform	\$0.70	\$1.05	33%
CleanTeq	CLQ	Nickel/Cobalt	483	Hayden Bairstow	Outperform	\$0.86	\$1.50	43%

Source: Company data, Macquarie Research, April 2017, Closing prices as of 12 April 2017

- On the graphite side of the equation SYR’s Balama project is getting ever closer to its planned first ore but details of how the company intends to realise its anode business ambitions are frustratingly vague.
- One sector of the battery supply chain where we believe a significant and likely sustained supply shortfall exists is cobalt. We point to our recent initiation on CleanTeq, which plans to produce nickel and cobalt sulphates for the battery market using its proprietary Clean-iX® technology.

Brine production starting to respond

- Brine production is also starting to respond, but ramp-up has been hampered by both technical and bureaucratic challenges although these appear to be slowly getting resolved.
- As was the case the last time when lithium prices spiked, SQM has demonstrated the greatest agility, significantly increasing production and sales, to take advantage of higher prices. SQM lifted production 33% to 44kt, adding some of the biggest volume increases to the market in 2016.
- Though we do not get the same level of detail from ALB, using reported lithium revenue figures we can see a 31% increase in revenue YoY, which includes what we estimate to be a 36% volume increase.

Fig 2 Total exports from Chile lifted significantly...

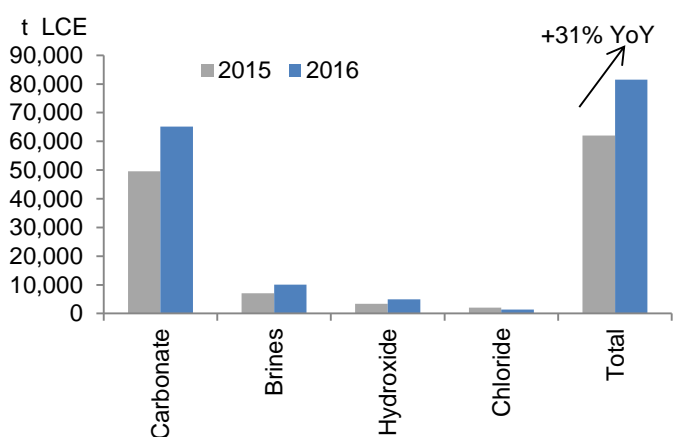
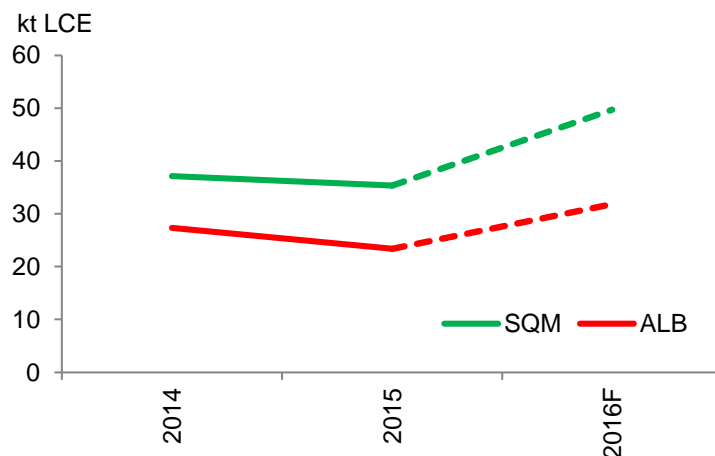


Fig 3 ...but we see believe it is more SQM than ALB

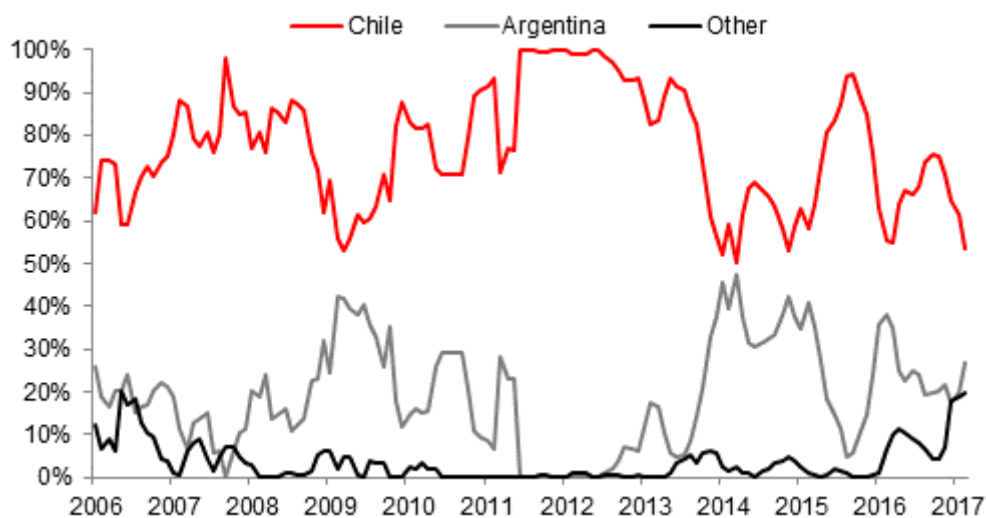


Source: Chilean Customs, Macquarie Research, April 2017

Source: Chilean customs, Macquarie Research, April 2017

- Despite the increase in production ALB is still operating well below stated capacity and struggling to hit volume targets. From our analysis of export statistics we believe ALB is running at 70% utilisation (~31ktpa), well below its stated capacity of 45kt. This makes sense in the context of the long delays ALB has been experiencing in terms of ramping up its Negra 2 plant.
- Looking forward to 2017, ALB has forecasted that the La Negra II plant will only be one-third ramped during 2017. Given that the plant has a 20ktpa capacity that would mean only an extra ~6.6kt production.
- A key brake on ALB's progress has been the protracted negotiation of its position with the Chilean government. This has recently been resolved albeit with some significant concessions:
 - ⇒ **Production:** Up to 25% of production will be sold within Chile for a preferential price. CORFO announced that Chile is looking to develop value additive production within the country with this production.
 - ⇒ **Capital:** ALB must invest US\$600m in Chile (the maximum of the original US\$400-600m from the original proposal) over the next four years. This is equivalent to a capital intensity of ~US\$11m/t LCE.
 - ⇒ **State Royalties:** ALB will pay additional royalties of approximately US\$100mpa, in line with the Feb 2016 proposal. The original document highlighted that this royalty would be progressive up to 40%, but no clarity was provided in this update.
 - ⇒ **Additional royalties:** The Atacama community near the Salar de Atacama will receive 3.5% of annual sales as a profit share, with a minimum payment of US\$10mpa.
- ORE also struggled in 2016 losing a good deal of its market shine. Throughout the year ORE revised its production forecasts down and pushed out when nameplate production would be achieved. This trend continued into the H1FY17 result where management cut production forecasts by ~40% for H2FY17.

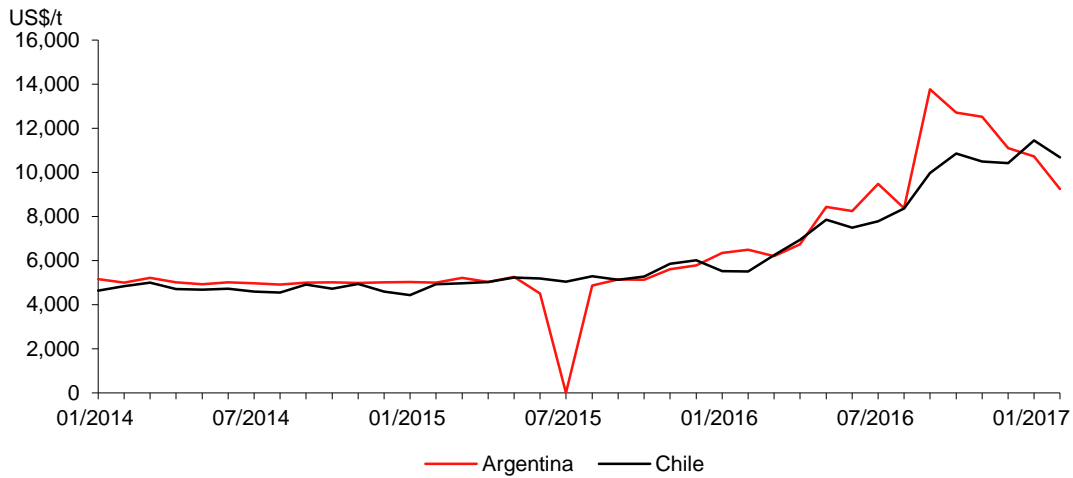
Fig 4 Argentina is taking market share from Chile as ORE sends more lithium carbonate to China...



Source: China Customs, Macquarie Research, April 2017

- However, despite the production difficulties the rise of ORE into the lithium market has seen Argentina start to take Chinese market share away from Chile. But this does appear to be at the expense of unit value.

Fig 5 ...but it comes at the expense of unit value



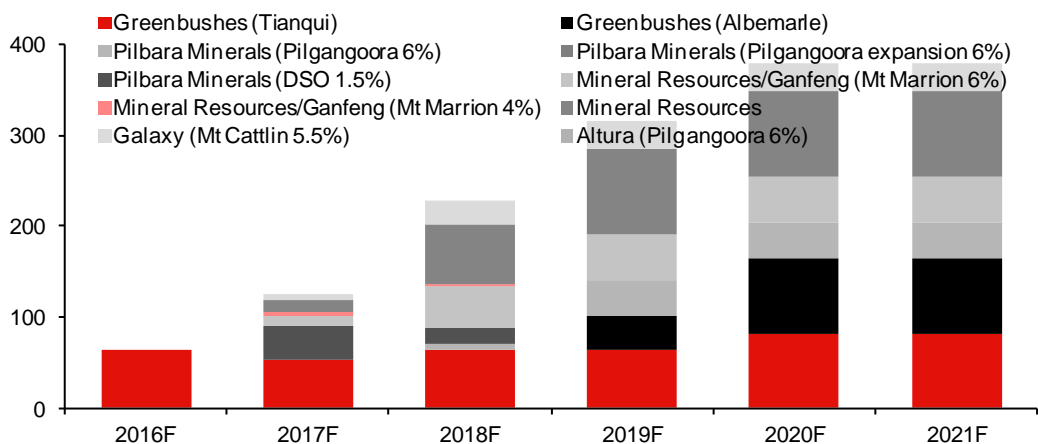
Source: China Customs, Macquarie Research, April 2017

- Interestingly, we are also seeing China receive lithium carbonate from Japan – clearly either reselling or transshipment of material, opening up a curious question of whether or not off-take agreements are being completed at low prices, enabling a secondary market.

Australian Hard Rock lithium – new mines arriving

- Galaxy Resources’ Mt Cattlin mine reached nameplate in late March and Mineral Resources’ (MIN AU, A\$11.42, Outperform, TP: A\$14.51, Andrew Wackett)/Ganfeng’s Mt Marion recently shipped its second shipment in a 30-day period suggesting it too is approaching its planned run-rate. We understand that MIN is close to completing an initial shipment of Direct Shipping Ore (DSO) from its Wodgina project in the Pilbara.

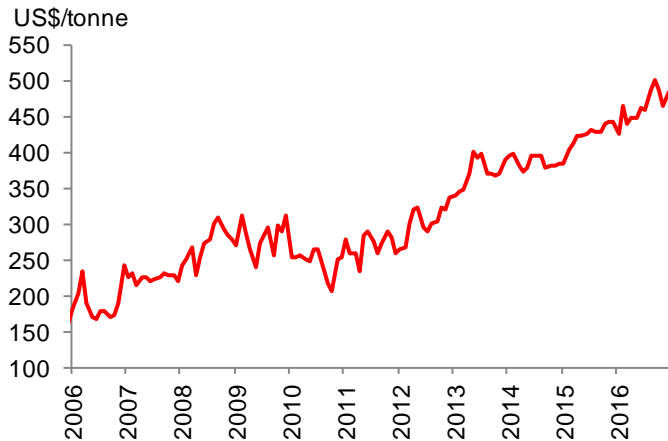
Fig 6 Current, planned and proposed West Australian spodumene projects



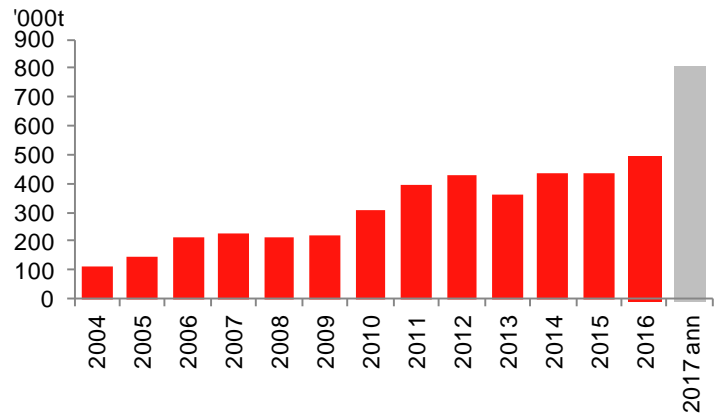
Source: Company data, Macquarie Research, April 2017

- But the spodumene market is still in short supply, at least in the near term. In our view the speed with which Chinese conversion capacity has been built has outpaced both spodumene supply and true LCE demand.
- The fact that second-tier Chinese converters are willing to take low grade ‘DSO’ and other ‘below specification’ interim products speaks to this. As a result irrational market behaviours have persisted and likely to continue in the short term.

Fig 7 Australian spodumene implied price (CIF China) Fig 8 Australian spodumene exports



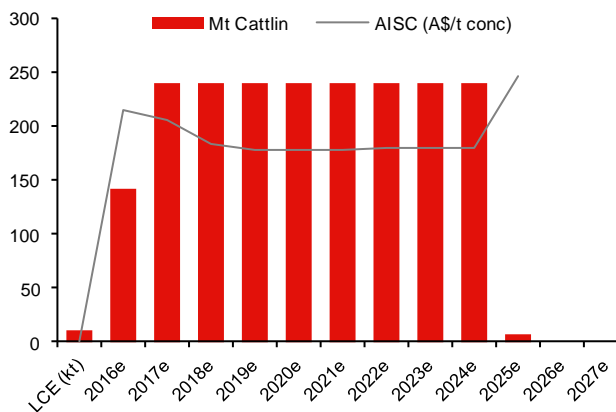
Source: Customs data, Macquarie Research, April 2017



Source: Company data, Customs data, Macquarie Research, April 2017

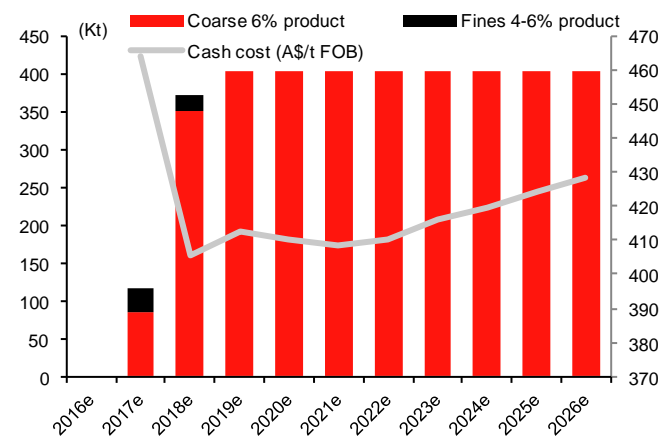
- Adding to the situation, achieving product specifications for the miners appears to have been more challenging than we had anticipated and both GXY and MIN have been slower to ramp up than we had expected. Consequently spodumene pricing has been stronger than we had expected, although we continue to stress that we still see this as a short-term phenomenon.
- We expect technical issues to be a feature of all new projects and expansions alike; however, we also expect these issues to be resolved in a shorter time frame than additional demand eventuates.

Fig 9 Mt Cattlin production forecast



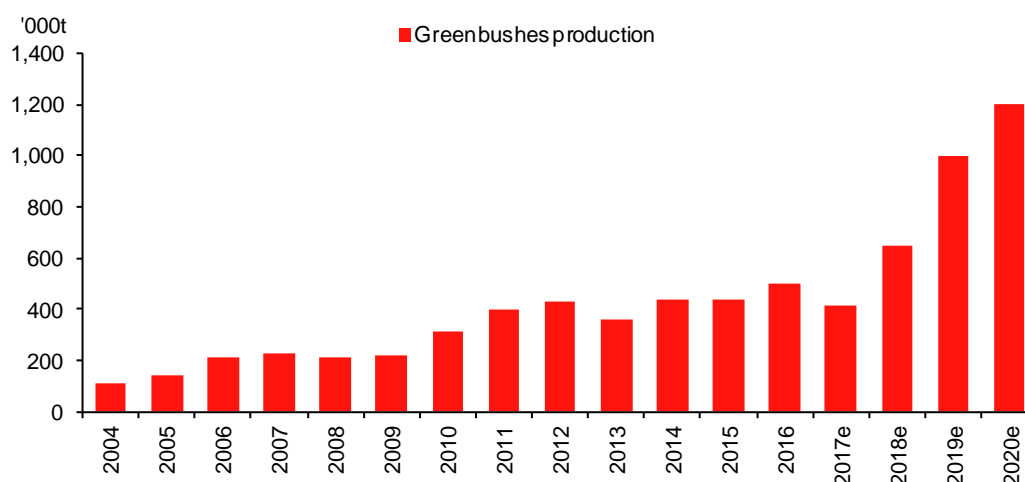
Source: GXY, Macquarie Research, April 2017

Fig 10 Mt Marion production forecast



Source: NMT, MIN, Macquarie Research, April 2017

- As a bellwether of the outlook ALB's strategic ambition is to capture 50% or ~90kt of its forecast growth in the LCE market over the next five years. Half of this expansion is expected to come from its La Negra brine expansion and the remainder from expansion of the Greenbushes mine and associated conversion capacity.
- Importantly for pricing ALB also expects to have 80-90% of this under long-term contracts. We also note that the company's recent royalty agreement with the Chilean government agreed to a 40% 'commission' should LCE pricing be above US\$10,000/t. We believe a 40% commission would be prohibitive and suggests ALB believes long-term pricing will be below this level.

Fig 11 The Greenbushes expansion is no longer the elephant in the room

Source: ALB, Macquarie Research, April 2017

- Doubling production at Greenbushes, and by implication adding downstream conversion capacity, is a key element of this strategy. We note that ALB's 165ktpa of LCE capacity includes a 'greenfield' 40kt battery grade lithium salts plant. The expansion is expected to come online in 2019 but in the interim we expect production at the mine to be increased to fully utilise the 650-740kt of existing capacity.

Conversion capacity growth largely already supplied

- Understanding the Chinese conversion capacity outside of the main players, Tianqi/ALB and Ganfeng, remains key to understanding how the near-term pricing environment might play out. We believe that this second- and third-tier of the sector accounts for the majority of underutilised capacity in the market but that volumes are relatively modest. We expect this shortfall to be satisfied in the near term.
- Between them Tianqi, Ganfeng and ALB/Jiangxi account for 78Kt of current LCE conversion capacity and 78% of planned expansions. Both current requirements and planned expansion among the big three are already covered by the existing capacity or expansion of owned upstream assets, principally Greenbushes.

Fig 12 Estimated conversion capacity and concentrate requirements to 2020

Company	Installed capacity (LCE kt)	Concentrate requirement (kt)	Expanded capacity (LCE kt)	Concentrate requirement (kt)	Supply source
Tianqi	33	280	81	689	Greenbushes
ALB/Jiangxi Jiangli	15	127	75	638	Greenbushes
Ganfeng	30	255	42	357	Mt Marion
Other	23	195	53	451	Mt Cattlin/Wodgina
Total	101	858	251	2134	

Source: Company data, Macquarie Research, April 2017

- Consequently we maintain our view that with the arrival of Mt Cattlin and Mt Marion the pressure should begin to come out of the market. We believe current spodumene prices are at or even past their peak. Given the tier one converters have already secured all the supply required for current and future production plans there appears to be little motivation for them to chase new hard rock developments. As a result we believe development projects will have to assume greater counterparty risk negotiating off-takes and funding with smaller and less financially capable customers.
- Whilst we think pricing will soon pass its peak, in the immediate term we still expect there to be beneficiaries of high prices. Given it is the only 'independent' producer GXY looks best placed and we would expect the company to be in a strong position for contract negotiations in CY18 and potentially CY19, too.

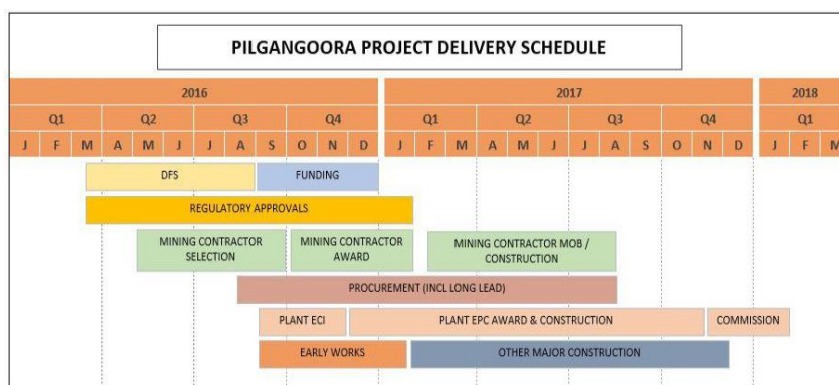
Brine expansion plans also underway

- In September 2016, SQM announced plans to increase lithium hydroxide (LH) production capacity in Chile from 6kt to 13.5kt:
 - ⇒ Two stages: de-bottlenecking existing 6kt LH plant to 6.5kt and constructing a new 7kt plant.
 - ⇒ Proposed to be completed by the end of CY18 at a cost of US\$30m.
- In the announcement SQM’s CEO commented that “...we expect lithium hydroxide demand growth to outpace lithium carbonate demand growth in the upcoming years.” In line with our view that as demand for NCA and NMC batteries increases, so will LH demand.
- However, in November 2016, SQM submitted a proposal for a US\$180m expansion project for Salar del Carmen where the LC and LH plants are located. Within this application they proposed:
 - ⇒ Increasing the capacity of the existing LC and LH plants to 70ktpa and 32ktpa, respectively.
 - ⇒ Both expansions are proposed in phases. The LC expansion is a two-phase development, first from 48ktpa to 58ktpa, and then a second to 70ktpa.
 - ⇒ The LH expansion is a three-phase development: first to increase the existing plant from 10kt (higher than the reported 6kt), the second is building a new 8kt plant and the third is another 8kt plant.
- Despite the differences between the September announcement and the November filing, the push for growth is clear. SQM is reacting to prices and moving to re-gain market share from the aspirant project developers.
- Outside its home country, SQM paid US\$25m to Lithium Americas (LAC.TSX, Not Covered) for a 50% stake in the Minera Exar project. SQM has announced that it will be spending US\$100m on this 25ktpa project in 2017, with a proposed start date of 2019. Given construction is only starting in 2017, and using ORE as an example, we see such a timeline as ambitious.
- ALB also filed a proposal to expand production in November 2016:
 - ⇒ US\$300m expansion from 45.3ktpa (current lithium carbonate capacity) to 88ktpa, but sustaining current lithium chloride production at 4.5ktpa (6ktpa LCE).
- Given its production difficulties we believe that ORE will have to delay the Phase 2 expansion until it has sufficient operating cash flow to fund its development. Outside of its core Olaroz operation, ORE has been progressing work into construction of a 10kt lithium hydroxide plant in Japan, with a total cost of US\$30m. Though we do not currently ascribe any value to this project, given high demand for lithium hydroxide, if successful we believe this project could help lift cash flows and reverse some of ORE’s declines.

North West spodumene developers – metallurgy, MIN and TAW could be challenges

- PLS is also proposing a DSO start-up operation at its Pilgangoora project and recently announced an infrastructure services MOU with Atlas Iron (AGO.AU, Not covered) to provide processing, logistics and port capacity at Port Hedland.

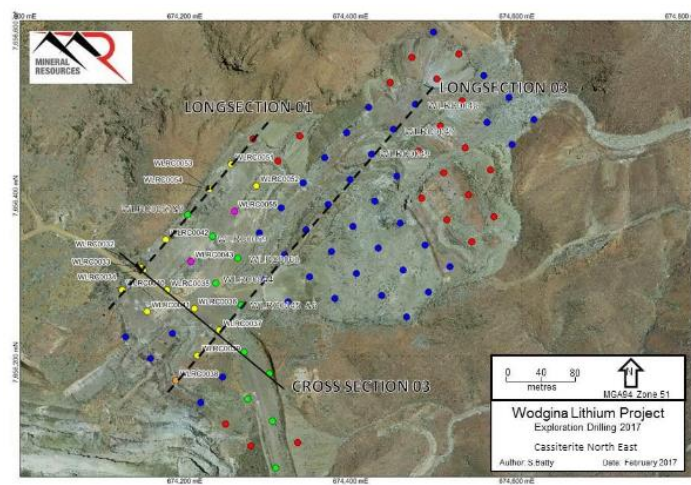
Fig 13 PLS plans to be in production by early 2018



Source: PLS, Macquarie Research, April 2017

- PLS continues to advance the full-scale Pilgangoora project and also progress study work on a Stage 2 expansion to double the size of the project to 4Mtpa. Metallurgy has been a key area of focus in recent work with notable improvements on recovery made on the DFS assumptions.
- AJM is also well advanced with its neighbouring Pilgangoora project with bulk earthworks underway and a camp in place. Both PLS and AJM are targeting commissioning by late 2017; however, we think metallurgy could be a challenge for the North West developers, with the potential for commissioning to be extended.
- We continue to be of the view that speed to market is of the essence. GXY has already demonstrated this with strong pricing locked-in for CY17 and imminent DSO sales from Wodgina underlines the fact. Clearly the window for new entrants such as PLS and AJM is still open but how long this remains so is uncertain. We highlight what we see a two key brownfield projects that could enter the market ahead of PLS and AJM.

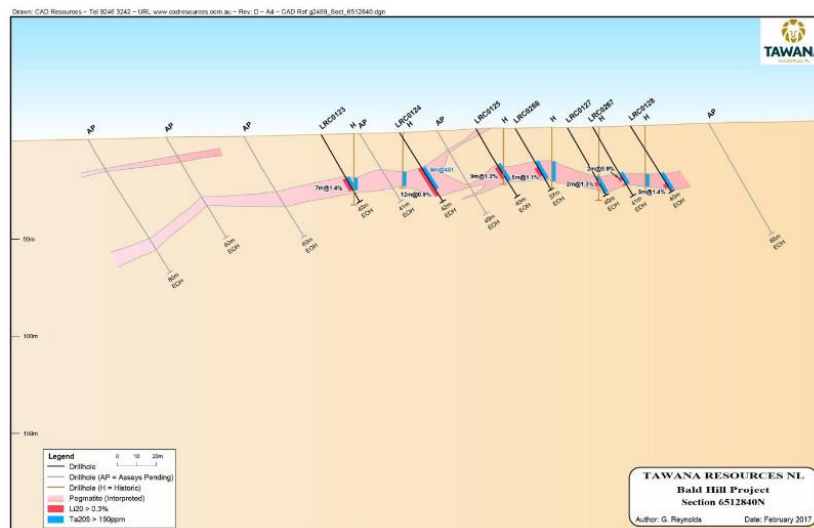
Fig 14 Wodgina - Cassiterite NE pit



Source: MIN, Macquarie Research, April 2017

- Firstly MIN's Wodgina project now has a substantial global resource of 101Mt. Higher confidence resources are limited to 10.9Mt of Indicated material at the Cassiterite Pit area. Metallurgy, per our comments above, is a key unknown and production plans for the project are unclear. But given MIN's capabilities and the substantial infrastructure already at Wodgina we believe it could become a significant production centre, in a short period of time.

Fig 15 TAW's Bald Hill project



Source: TAW, Macquarie Research, April 2017

- Secondly Tawana Resources (TAW.AU, Not rated) is earning into the Bald Hill Mine project and also recently acquired the surrounding tenements in the Cowan Project, southeast of Kambalda. Pegmatites at Bald Hill have historically been mined for tantalum but, as with Wodgina and Mt Catlin, are also known to contain spodumene.
- A significant exploration programme is underway to evaluate the potential of the project. Study work is still being finalised but TAW expects the project to be ‘low capex’ and is planning to fast track spodumene production with first concentrates in 1QCY18.

Graphite outlook still opaque

- As always the outlook for the graphite sector is more opaque. Syrah Resources is well advanced with the construction of Balama and on track to begin commissioning in early FY18. However, the company’s battery strategy remains ‘broad brush’ with the release of further details recently deferred for a second time. The company cited the signing of a MOU with battery anode manufacturer, BTR, and commercial discussions as the reason for the deferral.

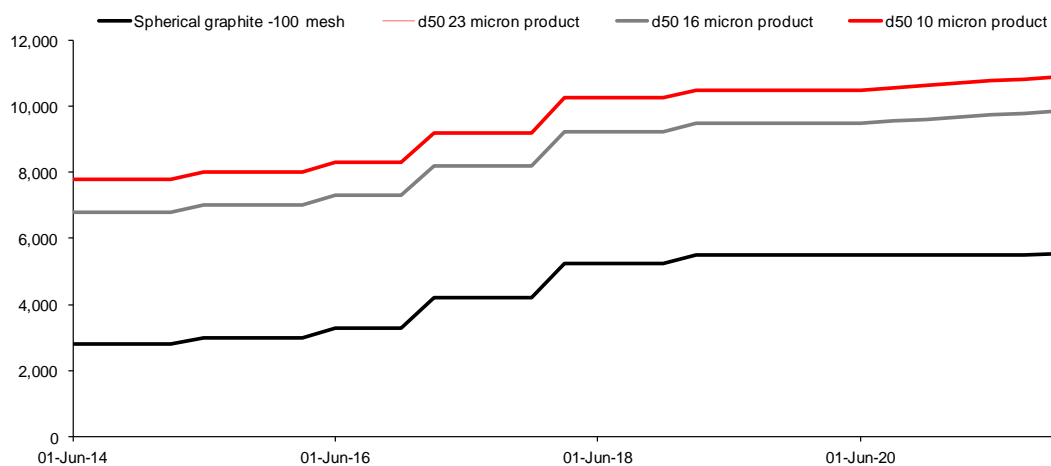
Fig 16 Balama is expected to have an extended ramp-up phase

	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Balama Graphite Project, Mozambique								
Balama Plant Construction	█	█	█	█				
Commissioning			█	█				
First Ore & Production Ramp Up			█	█	█	█	█	█
Full Production Capacity							█	█

Source: SYR, Macquarie Research, April 2017

- Graphite prices have been in a persistent downward trend and, while difficult to quantify, latent capacity in China seems abundant. Our key concern for the company is how it bridges the working capital gap that we see eventuating between completing ramp-up and first anode material production in a flat traditional market.

Fig 17 Forecast spherical graphite prices (US\$/t)



Source: Company data, Industry data, Macquarie Research, April 2017

- The company finished CY16 with a cash balance of US\$163m, having spent US\$113m to 31 December; total capex budget is now US\$200m. The company is also negotiating a US\$50m debt facility for Balama and corporate uses. However, on the current BAM timeline and our price forecasts we believe additional working capital funding is likely.

- Funding is also the key question for Magnis Resources. Progress on the company's Nachu project has been limited as it focuses on off-take and funding arrangements. The company signed a MOU with Russian nuclear technology giant ROSATOM in January for potential supply of material to the nuclear industry. But developments on the battery anode side of the business have been limited. We now assume that a 30% sell-down of the project provides the bulk of the funding.

Changes to our earnings forecasts, recommendations and target prices

- We have updated our models for GXY, PLS, AJM, SYR and MNS to include recent 1HFY17 and full-year CY16 financials. We note that none of these companies yet have material earnings. We have made a number of changes to our graphite prices which results in a ~25% reduction to our long-term earnings forecasts for SYR and MNS.
- We make only one change to our recommendations upgrading GXY to Neutral with a target price of \$0.46/sh as we expect it to continue to benefit from strong pricing in FY17 and FY18. We cut our target price for PLS to \$0.38/sh after bringing our valuation methodology back to 1x NPX in line with our other hard rock lithium names. We lower target price for SYR to \$3.60/sh and MNS to \$1.05/sh on our reduced graphite pricing forecasts.

Fig 18 Changes to our recommendations and target prices

Company	Code	Recommendation		Target price	
		Old	New	Old	New
Orocobre	ORE	Neutral	Neutral	3.17	3.17
Galaxy Resources	GXY	Underperform	Neutral	0.46	0.46
Pilbara Minerals	PLS	Underperform	Underperform	0.50	0.38
Altura Mining	AJM	Underperform	Underperform	0.14	0.14
Syrah Resources	SYR	Outperform	Outperform	4.20	3.50
Magnis Resources	MNS	Outperform	Outperform	1.20	1.05

Source: Company data, Macquarie Research, April 2017

Fig 19 ORE summary model

Orocobre									
ASX: ORE	Price: (A\$ps)	2.89		Year end: Jun		Rating: Neutral		Up/dn	
	Mkt cap: (A\$m)	605		Diluted shares (m)		209.5		Target: 3.17	
ASSUMPTIONS									
		FY13	FY14	FY15	FY16e	FY17e	FY18e	FY19e	FY20e
Exchange Rate	A\$/US\$	1.01	0.91	0.84	0.73	0.75	0.74	0.74	0.74
Lithium Carbonate	US\$/t	4784	5020	4919	6099	9773	7850	7150	6875
Lithium Hydroxide	US\$/t	7348	7206	7213	8395	11238	9028	8223	7906
Borax	US\$/t	713	609	618	531	458	502	511	523
RATIO ANALYSIS									
		FY13	FY14	FY15	FY16e	FY17e	FY18e	FY19e	FY20e
Diluted share capital	m	118	132	152	209	210	210	210	210
EPS (diluted and pre sig. items)	A¢	76.5	-4.5	-5.0	-11.9	8.4	6.9	7.1	9.0
P/E	x	3.8x	-64.7x	-57.4x	-24.4x	34.3x	41.8x	40.5x	32.2x
CFPS	A¢	(22.1)	(5.2)	(6.3)	(1.1)	3.2	7.2	8.1	9.2
P/CF	x	-13.1x	-55.3x	-45.9x	-274.5x	90.5x	40.1x	35.7x	31.2x
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Franking Level	%	100%	100%	100%	100%	100%	100%	100%	100%
Book value per share	x	1.56	1.14	0.83	0.73	1.00	0.83	0.90	0.99
P/Book value	x	1.8x	2.5x	3.5x	4.0x	2.9x	3.5x	3.2x	2.9x
R.O.E. (pre sig items)	%	50%	-4%	-6%	-13%	9%	8%	8%	9%
R.O.A. (pre sig items)	%	-5%	-3%	-5%	-5%	-4%	-4%	-5%	-5%
Interest Cover	x	113.4x	49.9x	-7.4x	-18.0x	4.7x	5.6x	5.5x	21.6x
EBITDA per share	A\$ps	-0.09	-0.03	-0.04	-0.03	-0.04	-0.05	-0.05	-0.05
EV/EBITDA	x	-55.6x	-131.7x	-100.0x	-84.0x	-65.4x	-52.2x	-54.9x	-53.0x
P&L									
		FY13	FY14	FY15	FY16e	FY17e	FY18e	FY19e	FY20e
Sales Revenue	A\$m	19	26	21	19	18	19	20	20
Other Revenue	A\$m	0	0	0	0	0	0	0	0
Total Revenue	A\$m	19	26	21	19	18	19	20	20
Operating Costs	A\$m	(19)	(18)	(16)	(11)	(15)	(17)	(18)	(18)
Operational EBITDA	A\$m	0	7	5	8	3	2	2	2
Exploration Expense/Write-offs	A\$m	0	0	0	(0)	(0)	(0)	(0)	(0)
Corporate & Other Costs	A\$m	(11)	(12)	(11)	(15)	(12)	(12)	(13)	(13)
EBITDA	A\$m	(11)	(4)	(6)	(7)	(9)	(11)	(11)	(11)
D&A	A\$m	(1)	(1)	(1)	(2)	(1)	(2)	(2)	(2)
EBIT	A\$m	(11)	(6)	(7)	(9)	(10)	(12)	(12)	(13)
Net finance expense	A\$m	0	0	(1)	(0)	2	2	2	1
SDJ JV profit/loss	A\$m	102	(0)	(0)	(11)	24	22	22	28
Profit Before Tax	A\$m	90	(6)	(9)	(20)	16	12	12	15
Tax Expense (excl abn'l's)	A\$m	1	(0)	1	1	2	3	3	4
Minorities	A\$m	0	0	0	(0)	0	0	0	0
Adjusted NPAT	A\$m	92	(6)	(8)	(19)	18	15	15	19
Significant Items (post tax)	A\$m	4	(0)	9	(3)	(0)	0	0	0
Reported NPAT	A\$m	95	(6)	1	(22)	18	15	15	19
CASHFLOW									
		FY13	FY14	FY15	FY16e	FY17e	FY18e	FY19e	FY20e
Net Profit	A\$m	92	(6)	(8)	(19)	18	15	15	19
Interest/Tax/D&A	A\$m	(7)	3	2	5	1	1	2	1
Working Capital/Other	A\$m	(111)	(4)	(4)	12	(12)	(0)	(1)	(1)
Net Operating Cashflow	A\$m	(26)	(7)	(10)	(2)	7	15	17	19
PP&E	A\$m	(2)	(7)	(3)	(5)	(3)	(2)	(2)	(2)
Investments	A\$m	0	0	(2)	(3)	(0)	0	0	0
Sale of PPE and Other	A\$m	8	2	1	(6)	(0)	3	(54)	(10)
Free cash flow	A\$m	(20)	(12)	(14)	(17)	4	16	(39)	7
Dividends Paid	A\$m	0	0	0	0	0	0	0	0
Debt	A\$m	(10)	(3)	(43)	(36)	(0)	0	0	0
Equity Issuance	A\$m	24	28	38	82	1	0	0	0
Other	A\$m	0	0	0	0	0	0	0	0
Net Financing Cashflow	A\$m	14	26	(5)	46	0	0	0	0
Net change in cash	A\$m	(6)	14	(19)	29	4	16	(39)	7
BALANCE SHEET									
		FY13	FY14	FY15	FY16e	FY17e	FY18e	FY19e	FY20e
Cash	A\$m	11	25	7	36	39	55	16	23
PP&E & Mine Development	A\$m	9	13	13	15	15	16	16	17
Exploration	A\$m	14	9	9	6	6	6	6	6
Total Assets	A\$m	214	177	156	179	245	275	240	252
Debt	A\$m	4	4	3	3	2	2	2	2
Total Liabilities	A\$m	30	26	31	26	36	101	51	44
Total Net Assets / Equity	A\$m	184	151	126	153	209	174	189	208
Net Debt / (Cash)	A\$m	(7)	(21)	(4)	(33)	(37)	(53)	(14)	(21)
Gearing (net debt/(nd + equity))	%	(4%)	(16%)	(3%)	(28%)	(22%)	(44%)	(8%)	(11%)
Gearing (net debt/equity)	%	(4%)	(14%)	(3%)	(22%)	(18%)	(30%)	(7%)	(10%)
ATTRIBUTABLE MINE OUTPUT									
		FY13	FY14	FY15	FY16e	FY17e	FY18e	FY19e	FY20e
Lithium Production (ORE equity share)									
Olaroz Phase 1	t	0	0	82	4,487	7,827	8,775	10,400	1
Olaroz Phase 2	t	0	0	0	0	0	0	0	0
Lithium Hydroxide	t	0	0	0	0	0	0	0	0
Total lithium sales	t	0.0	0.0	82	4,487	7,827	8,775	10,400	1
Unit Cash Cost	US\$/t	n/a	n/a	4,021	3,711	3,544	3,465	3,268	
FOB Cash Cost	US\$/t	n/a	n/a	4,199	3,966	3,833	3,700	3,482	
Notional Cash Margin	US\$/t	na	na	1,684	4,404	9,141	6,891	6,180	
AISC cash cost	US\$/t	na	na	4,206	3,973	4,449	4,316	4,099	
OPERATIONAL OUTLOOK (ORE share)									
		FY13	FY14	FY15	FY16e	FY17e	FY18e	FY19e	FY20e
RESERVES AND RESOURCES (ATTRIBUTABLE)									
Lithium Resources									
		Measured	Indicated	Inferred	Total				
		Mt	Mt	Mt	Mt				
Project									
Olaroz		1.44	5.00	0.00	6.4				
Cauchari		0.00	0.00	0.47	0.5				
Salinas Grandes		0.00	0.00	0.24	0.2				
Total		1.4	5.0	0.7	7.2				
Borax Resources									
		Measured	Indicated	Inferred	Total				
		Mt	Mt	Mt	Mt				
Project									
Borax Argentina		0.0	6.9	13.8	20.7				
Total		0.0	6.9	13.8	20.7				
EQUITY DCF VALUATION									
		A\$m		A\$ps					
Projects									
Olaroz		254		1.21					
Olaroz Phase 2		51		0.24					
Borax		(1)		(0.00)					
Undeveloped Resources		29		0.14					
Corporate		(101)		(0.48)					
Unpaid Capital		2		0.01					
Cash		52		0.25					
Debt		(4)		(0.02)					
Net equity value at 10% WACC		283		1.34					
Target price				(1x NPV @ spot \$9,000/t LCE)		3.17			

Source: ORE, Macquarie Research, April 2017

Fig 20 GXY summary model

Galaxy Resources								Year end:	Jun	Rating:	Neutral	Up/dn	TSR
ASX: GXY	Price: (A\$ps)	0.42						Diluted shares (m)	1,928	Target:	0.46	10%	10%
	Mkt cap: (A\$m)	810											

ASSUMPTIONS		FY15	FY16e	FY17e	FY18e	FY19e	FY20e	FY21e	ATTRIBUTABLE MINE OUTPUT							
Exchange Rate	A\$/US\$	0.75	0.75	0.75	0.74	0.74	0.75	0.75	LCE (kt)							
Lithium Carbonate Equivalent	US\$/t	5228	8406	10400	7500	7000	6750	6750	Mt Cattlin	kt	1.3	16.7	28.2	28.2	28.2	28.2
Spoumene	US\$/t	420	679	904	648	603	581	581	Sal De Vida	kt	0.0	0.0	0.0	0.0	8.5	23.0
Potash	US\$/t	245	224	240	256	274	281	288	Total	kt	1.3	16.7	28.2	28.2	36.7	51.2
Tantalum	US\$/lb	60	60	61	62	64	66	67	By-products (k lb/kt)							
RATIO ANALYSIS									Mt Cattlin Tantalite	k lb	0.0	0.0	0.0	0.0	0.0	0.0
Diluted share capital	m	1,975.7	1,928.5	2,050.8	2,050.8	2,050.8	2,050.8	2,050.8	Sal De Vida KCl	k lb	0.0	0.0	0.0	0.0	32.3	87.4
EPS (diluted and pre sig. items)	A¢	-0.8	2.5	2.7	7.1	4.0	4.9	7.1	Total	k lb	0.0	0.0	0.0	0.0	32.3	87.4
P/E	x	-53.3x	17.0x	15.6x	5.9x	10.4x	8.5x	5.9x	Sales							
CFPS	A¢	(0.4)	0.0	2.7	9.5	6.0	6.5	10.3	LCE	kt	0.7	8.9	15.0	15.0	19.3	26.5
P/CF	x	-115.3x	895.7x	15.4x	4.4x	7.0x	6.5x	4.1x	Tantalite	k lb	0.0	0.0	0.0	0.0	0.0	0.0
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0	0.0	KCl	kt	0.0	0.0	0.0	0.0	32.3	87.4
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Total	kt	0.7	8.9	15.0	15.0	51.6	113.9
Franking Level	%	0%	0%	0%	0%	0%	0%	0%	Production cost							
Book value per share	x	0.05	0.25	0.29	0.36	0.40	0.46	0.53	FOB Costs	(A\$/t)	905	431	339	319	317	316
P/Book value	x	8.1x	1.7x	1.5x	1.2x	1.1x	0.9x	0.8x	All in Cash Costs	(A\$/t)	1,662	599	425	384	380	380
R.O.E. (pre sig items)	%	-15%	10%	9%	20%	10%	11%	13%	FOB Costs (LCE)	(US\$/t)	9,602	6,621	4,850	4,545	4,221	3,882
R.O.A. (pre sig items)	%	-6%	-1%	11%	22%	11%	11%	13%	All in Cash Costs (LCE)	(US\$/t)	-	7,323	5,580	5,100	4,800	4,503
Interest Cover	x	-1.2x	-0.9x	217.9x	-84.4x	n/m	-74.9x	-32.3x	OPERATIONAL OUTLOOK							
EBITDA per share	A\$ps	0.00	0.00	0.04	0.10	0.06	0.07	0.10								
EV/EBITDA	x	-101.3x	-106.6x	9.2x	3.4x	6.6x	4.6x	2.3x								

EARNINGS		FY15	FY16e	FY17e	FY18e	FY19e	FY20e	FY21e
Sales Revenue	A\$m	0	0	154	308	210	284	427
Other Revenue	A\$m	0	0	0	0	0	0	0
Total Revenue	A\$m	0	0	154	308	210	284	427
Operating Costs	A\$m	(0)	(0)	(69)	(97)	(87)	(132)	(211)
Operational EBITDA	A\$m	(0)	(0)	85	211	122	153	216
Exploration Expense/Write-offs	A\$m	(0)	(0)	0	0	(1)	(1)	(1)
Corporate & Other Costs	A\$m	(8)	(8)	(6)	(6)	(6)	(7)	(7)
EBITDA	A\$m	(8)	(8)	79	205	115	145	208
D&A	A\$m	(0)	(0)	0	0	0	(2)	(7)
EBIT	A\$m	(8)	(8)	79	205	115	143	201
Net Interest	A\$m	(7)	(9)	(0)	2	3	2	6
Profit Before Tax	A\$m	(16)	(17)	79	207	118	144	208
Tax Expense	A\$m	0	65	(24)	(62)	(35)	(43)	(62)
Minorities	A\$m	0	0	0	0	0	0	0
Adjusted NPAT	A\$m	(16)	48	55	145	83	101	145
Significant Items (post tax)	A\$m	70	75	0	0	0	0	0
Reported NPAT	A\$m	55	123	55	145	83	101	145

CASHFLOW		FY15	FY16e	FY17e	FY18e	FY19e	FY20e	FY21e
Net Profit	A\$m	55	123	55	145	83	101	145
Interest/Tax/D&A	A\$m	(2)	(60)	18	56	32	46	69
Working Capital/other	A\$m	(60)	(62)	(17)	(7)	8	(14)	(3)
Net Operating Cashflow	A\$m	(7)	1	56	194	122	133	212
Capex	A\$m	(2)	(21)	(4)	(170)	(178)	(102)	(24)
Investments	A\$m	47	8	0	0	0	0	0
Sale of PPE and Other	A\$m	0	0	0	0	0	0	0
Free cash flow	A\$m	38	(12)	52	24	(56)	31	188
Dividends Paid	A\$m	0	0	0	0	0	0	0
Debt	A\$m	(50)	15	(27)	(14)	0	0	0
Equity Issuance	A\$m	(0)	2	59	0	0	60	0
Other	A\$m	0	0	0	0	0	0	0
Net Financing Cashflow	A\$m	(50)	17	32	(14)	0	60	0
Net change in cash	A\$m	(12)	5	84	11	(56)	91	188

BALANCE SHEET		FY15	FY16e	FY17e	FY18e	FY19e	FY20e	FY21e
Cash	A\$m	5	9	94	105	49	140	327
PP&E & Mine Development	A\$m	2	343	347	517	696	795	812
Exploration	A\$m	124	123	129	135	138	138	138
Total Assets	A\$m	140	554	717	944	1,029	1,273	1,513
Debt	A\$m	28	40	13	0	0	0	0
Total Liabilities	A\$m	37	81	130	212	214	337	432
Total Net Assets / Equity	A\$m	103	473	587	732	815	936	1,081
Net Debt / (Cash)	A\$m	24	31	(80)	(105)	(49)	(140)	(327)
Gearing (net debt/(nd + equity))	%	19%	6%	(16%)	(17%)	nm	nm	nm
Gearing (net debt/equity)	%	23%	7%	(14%)	(14%)	(6%)	(15%)	(30%)
Total asset/debt	(x)	4.9	13.8	54.1	n/m	n/m	nm	nm

RESERVES AND RESOURCES (ATTRIBUTABLE)		Period (years)	Tonnes Li (kt)	LiCo3e q (kt)	K (kt)	Ta2O5 (ppm)	Ta2O5 (kt)	Ta2O5 (Mlbs)
Reserves								
Mt Cattlin	Mt							
Proved		2.4	1.1%	27.0	0	0.3	0.8	
Probable		7.5	1.02%	76.9	152	1.1	2.5	
Total		10.0	1.04%	103.9	152.0	1.0	2.1	
Sal De Vida								
Proved		1-6	34.0	181.0	32.2	633.0		
Total		7-40	180.0	985.0	1,869.0	3,564.0		
Proved		40.0	214.0	1166.0	1901.2	4197.0		
Resources								
Mt Cattlin Lithium	Mt							
Measured		2.5	1.2%	30	152	0.4	0.9	
Indicated		9.5	1.06%	101	170	1.6	3.6	
Inferred		4.3	1.07%	46	132	0.6	1.3	
Total		16.4	1.08%	178	157	3	6	
Sal De Vida								
Measured		7.2	787.0	565	3,005	6,241	11,902	
Indicated		2.6	768.0	197	1,048	2,186	4,169	
Inferred		8.3	717.0	597	3,180	6,692	12,762	
Total		18.1	751	1,359	7,233	15,119	28,833	

EQUITY DCF VALUATION (post merger)		A\$m	A\$ps
Projects			
Mt Cattlin		656	0.32
Sal De Vida		199	0.10
Undeveloped Resources		70	0.03
Corporate		(26)	(0.01)
Unpaid capital		12	0.01
Net cash (debt)		24	0.01
Net Equity Value (@ 10% WACC)		935	0.46
Price Target		(1x NPV)	0.46

Source: GXY, Macquarie Research, April 2017

Fig 21 PLS summary model

Pilbara Minerals								
ASX: PLS	Price: (A\$ps)	0.40		Year end:	Jun	Rating: Underperform	Up/dn	TSR
	Mkt cap: (A\$m)	511		Diluted shares (m)	1,277	Target: 0.38	-6%	-6%

ASSUMPTIONS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e
Exchange Rate	A\$/US\$	0.76	0.74	0.74	0.74	0.75	0.75
Lithium Carbonate Equivalent	US\$/t	10,166	8,225	7,150	6,875	6,750	6,750
Spodumene (6% CIF)	US\$/t	843	732	664	638	626	626

RATIO ANALYSIS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e
Diluted share capital	m	1,778.4	1,778.4	1,778.4	1,778.4	1,778.4	1,778.4
EPS (diluted and pre sig. items)	A¢	-1.1	-0.1	2.9	3.8	3.5	3.4
P/E	x	-35.7x	-563.9x	13.6x	10.5x	11.5x	11.8x
CFPS	A¢	(1.2)	(1.3)	5.1	5.4	4.5	4.5
P/CF	x	-33.9x	-30.8x	7.8x	7.5x	9.0x	8.9x
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Franking Level	%	0%	0%	0%	0%	0%	0%
Book value per share	x	0.16	0.16	0.19	0.20	0.24	0.27
P/Book value	x	2.5x	2.5x	2.1x	2.0x	1.7x	1.5x
R.O.E. (pre sig items)	%	-5%	0%	16%	19%	15%	12%
R.O.A. (pre sig items)	%	-7%	-1%	18%	19%	15%	13%
Interest Cover	x	7.9x	1.6x	-75.6x	-34.7x	-19.8x	-14.3x
EBITDA per share	A\$ps	-0.01	0.00	0.06	0.06	0.06	0.06
EV/EBITDA	x	-16.8x	#####	4.1x	2.8x	2.5x	1.9x

ATTRIBUTABLE MINE OUTPUT		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e
Spodumene (kt)							
Pilgangoora	kt	-	56	319	319	319	319
Pilgangoora 1.5% DSO	kt	-	1,200	600	-	-	-
Total	kt	-	-	919	319	319	319
Tantalite (k lb)							
Pilgangoora	k lb	-	-	0	0	0	0
Total	k lb	-	-	0	0	0	0
Sales							
Spodumene	kt	-	-	311	319	319	319
Tantalite	k lb	-	-	0	0	0	0
Total	kt	-	-	311	319	319	319
Total LCE production	kt	-	6.2	35.5	35.5	35.5	35.5
CFR cash costs	(A\$/wmt)	-	3,053	688	451	453	459
CFR AISC	(A\$/wmt)	-	6,582	724	483	484	491
CFR cash costs LCE	(US\$/t LCE)	-	4,365	4,085	4,052	4,068	4,106
CFR AISC LCE	(US\$/t LCE)	-	4,551	4,271	4,237	4,255	4,294

OPERATIONAL OUTLOOK						
Spodumene (kt)	Tantalite (k lb)	CFR cash costs (A\$/t)				
2016	2017	2018	2019	2020	2021	2022
2023	2024	2025	2026	2027	2028	2029
2030						

EARNINGS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e
Sales Revenue	A\$m	0	171	362	307	299	300
Other Revenue	A\$m	0	0	0	0	0	0
Total Revenue	A\$m	0	171	362	307	299	300
Operating Costs	A\$m	0	(153)	(243)	(179)	(181)	(185)
Operational EBITDA	A\$m	0	19	119	128	119	115
Exploration Expense/Write-offs	A\$m	(10)	(6)	(6)	(1)	(1)	(1)
Corporate & Other Costs	A\$m	(10)	(12)	(13)	(13)	(13)	(14)
EBITDA	A\$m	(20)	0	100	114	104	101
D&A	A\$m	(0)	(5)	(26)	(20)	(20)	(20)
EBIT	A\$m	(20)	(5)	74	94	84	81
Net Interest	A\$m	3	3	1	3	4	6
Profit Before Tax	A\$m	(18)	(2)	75	97	88	86
Tax Expense	A\$m	2	1	(22)	(29)	(27)	(26)
Minorities	A\$m	0	0	0	0	0	0
Adjusted NPAT	A\$m	(15)	(1)	52	68	62	60
Significant Items (post tax)	A\$m	(10)	0	0	0	0	0
Reported NPAT	A\$m	(25)	(1)	52	68	62	60

CASHFLOW		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e
Net Profit	A\$m	(25)	(1)	52	68	62	60
Interest/Tax/D&A	A\$m	(11)	(2)	41	27	17	19
Working Capital/other	A\$m	15	(20)	(2)	1	0	(0)
Net Operating Cashflow	A\$m	(21)	(23)	91	95	79	80
Capex	A\$m	(51)	(177)	(12)	(11)	(11)	(11)
Investments	A\$m	(5)	0	0	0	0	0
Sale of PPE and Other	A\$m	0	50	0	0	0	0
Free cash flow	A\$m	(77)	(150)	79	85	68	68
Dividends Paid	A\$m	0	0	0	0	0	0
Debt	A\$m	(0)	0	0	0	0	0
Equity Issuance	A\$m	151	0	0	0	0	0
Other	A\$m	0	0	0	0	0	0
Net Financing Cashflow	A\$m	150	0	0	0	0	0
Net change in cash	A\$m	74	(150)	79	85	68	68

BALANCE SHEET		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e
Cash	A\$m	174	23	102	187	255	324
PP&E & Mine Development	A\$m	104	277	262	253	244	236
Exploration	A\$m	8	14	20	20	20	20
Total Assets	A\$m	291	338	418	493	552	612
Debt	A\$m	0	0	0	0	0	0
Total Liabilities	A\$m	7	55	83	130	127	127
Total Net Assets / Equity	A\$m	284	283	335	363	425	485
Net Debt / (Cash)	A\$m	(174)	(23)	(102)	(187)	(255)	(324)
Gearing (net debt/(nd + equity))	%	(158%)	(9%)	(44%)	(106%)	(151%)	(200%)
Gearing (net debt/equity)	%	(61%)	(8%)	(31%)	(52%)	(60%)	(67%)
Total asset/debt	(x)	nm	nm	nm	nm	nm	nm

EQUITY DCF VALUATION		
Projects		A\$m
Pilgangoora		425
Tabba Tabba		4
Undeveloped Resources		72
Other Projects & Investments		0
Corporate		(64)
Unpaid capital		150
Net cash (debt)		80
Net Equity Value (@ 12% WACC)		667
Price Target		(1x NPV) 0.38

RESERVES AND RESOURCES (ATTRIBUTABLE)						
Reserves						
Pilgangoora						
Proved	Mt	17.5	1.3%	229.3	0	2.5
Probable		52.3	1.25%	653.8	134	6.7
Total		69.8	1.27%	883.0	134.0	5.7
Tabba Tabba						
Proved		32.0	0.0%	0.0	1420	0.5
Total		101.0	0.0%	0.0	1249	1.3
Proved		133.0	0.0%	0.0	1290.0	1.1
Resources						
Pilgangoora Lithium						
Measured	Mt	18.0	1.4%	245		
Indicated		65.6	1.24%	813		
Inferred		45.0	1.15%	518		
Total		128.6	1.23%	1,576		
Pilgangoora Tantalum						
Measured	Mt	0.0	0	0.0	0.00	
Indicated		17.9	182	3.3	7.18	
Inferred		24.3	205	5.0	10.98	
Total		42.2	195.2	8.2	18.2	

Source: PLS, Macquarie Research, April 2017

Fig 22 AJM summary model

Altura Mining								
ASX: AJM	Price: (A\$ps)	0.14		Year end: Jun		Rating: Underperform	Up/dn	TSR
	Mkt cap: (A\$m)	171		Diluted shares (m)		1,222	Target: 0.14	0% 0%
ASSUMPTIONS								
Exchange Rate	A\$/US\$	FY14	FY15	FY16e	FY17e	FY18e	FY19e	
Lithium Carbonate Equivalent	US\$/t	5020	4919	6099	8301	8226	7485	
Spodumene (6% CIF)	US\$/t	230	223	351	587	593	554	
RATIO ANALYSIS								
Diluted share capital	m	454.3	837.7	1,222.5	1,541.2	2,421.2	2,421.2	
EPS (diluted and pre sig. items)	A¢	-0.7	-3.6	-3.2	-0.5	-0.1	1.3	
P/E	x	-19.1x	-3.9x	-4.4x	-30.2x	-119.1x	10.4x	
CFPS	A¢	(0.3)	(0.5)	(0.6)	(0.6)	(0.4)	1.7	
P/CF	x	-54.2x	-30.8x	-24.8x	-22.7x	-37.9x	8.5x	
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0	
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Franking Level	%	0%	0%	0%	0%	0%	0%	
Book value per share	x	0.11	0.03	0.02	0.03	0.06	0.08	
P/Book value	x	1.2x	4.5x	7.9x	4.1x	2.2x	1.8x	
R.O.E. (pre sig items)	%	-6%	-23%	-62%	-12%	-2%	18%	
R.O.A. (pre sig items)	%	-3%	-13%	-30%	-9%	-2%	23%	
Interest Cover	x	45.7x	143.5x	854.6x	-16.0x	-19.4x	31.0x	
EBITDA per share	A\$ps	0.00	-0.01	-0.01	0.00	0.00	0.02	
EV/EBITDA	x	-95.2x	-37.0x	-13.7x	-23.5x	-60.1x	3.3x	
EARNINGS								
Sales Revenue	A\$m	7	5	1	1	12	136	
Other Revenue	A\$m	0	0	0	0	0	0	
Total Revenue	A\$m	7	5	1	1	12	136	
Operating Costs	A\$m	(6)	(5)	(7)	(1)	(8)	(76)	
Operational EBITDA	A\$m	2	0	(6)	0	5	60	
Exploration Expense/Write-offs	A\$m	0	0	0	0	0	0	
Corporate & Other Costs	A\$m	(4)	(5)	(7)	(7)	(8)	(8)	
EBITDA	A\$m	(2)	(5)	(12)	(7)	(3)	51	
D&A	A\$m	(1)	(1)	(1)	(0)	(0)	(3)	
EBIT	A\$m	(3)	(6)	(13)	(7)	(4)	48	
Net Interest	A\$m	0	0	0	(0)	(0)	(2)	
Profit Before Tax	A\$m	(3)	(6)	(13)	(8)	(4)	47	
Tax Expense	A\$m	(1)	(0)	(1)	1	1	(14)	
Minorities	A\$m	0	0	0	0	0	0	
Adjusted NPAT	A\$m	(3)	(6)	(13)	(6)	(3)	33	
Significant Items (post tax)	A\$m	(4)	(13)	1	1	0	0	
Reported NPAT	A\$m	(7)	(18)	(12)	(6)	(3)	33	
CASHFLOW								
Net Profit	A\$m	(7)	(31)	(32)	(6)	(3)	33	
Interest/Tax/D&A	A\$m	(0)	(0)	(4)	(3)	(3)	15	
Working Capital/other	A\$m	6	27	29	(1)	(3)	(7)	
Net Operating Cashflow	A\$m	(1)	(4)	(7)	(9)	(9)	40	
Capex	A\$m	(0)	0	(0)	(27)	(143)	(7)	
Investments	A\$m	5	0	0	0	0	0	
Sale of PPE and Other	A\$m	(1)	(1)	1	0	0	0	
Free cash flow	A\$m	2	(5)	(6)	(36)	(152)	33	
Dividends Paid	A\$m	0	0	0	0	0	0	
Debt	A\$m	(0)	(0)	0	0	0	0	
Equity Issuance	A\$m	0	4	26	42	104	0	
Other	A\$m	0	0	0	0	0	0	
Net Financing Cashflow	A\$m	(0)	4	26	42	104	0	
Net change in cash	A\$m	2	(1)	20	6	(48)	33	
BALANCE SHEET								
Cash	A\$m	3	2	22	28	(20)	13	
PP&E & Mine Development	A\$m	32	1	1	36	179	182	
Exploration	A\$m	14	15	14	1	3	5	
Total Assets	A\$m	89	46	43	77	174	213	
Debt	A\$m	32	17	18	18	14	9	
Total Liabilities	A\$m	37	21	21	25	21	27	
Total Net Assets / Equity	A\$m	52	26	22	52	153	186	
Net Debt / (Cash)	A\$m	28	15	(4)	(10)	34	(4)	
Gearing (net debt/(nd + equity))	%	35%	37%	(21%)	(25%)	18%	(2%)	
Gearing (net debt/equity)	%	55%	59%	(17%)	(20%)	22%	(2%)	
Total asset/debt	(x)	2.8	2.7	2.3	4.4	nm	nm	
ATTRIBUTABLE MINE OUTPUT								
Spodumene (kt)		FY14	FY15	FY16e	FY17e	FY18e	FY19e	
Pilgangoora	kt	-	-	-	-	14	182	
Total	kt	-	-	-	-	14	182	
Sales								
Spodumene		kt	-	-	-	-	14	182
Total	kt	-	-	-	-	-	14	182
Total LCE production		kt	-	-	-	-	1.7	22.7
FOB cash costs		(A\$/wmt)	-	-	-	-	511	421
AISC		(A\$/wmt)	-	-	-	-	10,764	453
FOB cash costs LCE		(US\$/t LCE)	-	-	-	-	4,835	4,759
AISC LCE		(US\$/t LCE)	-	-	-	-	5,014	4,913
OPERATIONAL OUTLOOK								
RESERVES AND RESOURCES (ATTRIBUTABLE)								
Reserves								
Pilgangoora	Mt	Li2O (%)	Li2O (kt)	Ta2O5 (ppm)	Ta2O5 (kt)	Ta2O5 (Mlbs)		
Proved	0.0	0.0%	0.0	0	0.0	0.0		
Probable	30.1	1.04%	313.0	0	0.0	0.0		
Total	30.1	1.04%	313.0	0.0	0.0	0.0		
Resources								
Pilgangoora Lithium	Mt	Li2O (%)	Li2O (kt)					
Measured	0.0	0.0%	0					
Indicated	40.3	1.00%	403					
Inferred	2.3	0.90%	21					
Total	42.6	0.99%	424					
EQUITY DCF VALUATION								
Projects							A\$m	A\$ps
Pilgangoora							260	0.17
Undeveloped Resources							0	0.00
Other Projects & Investments							0	0.00
Corporate							(48)	(0.03)
Unpaid capital							0	0.00
Net cash (debt)							10	0.01
Net Equity Value (@ 10% WACC)							223	0.14
Price Target							(1x NPV)	0.14

Source: AJM, Macquarie Research, April 2017

Fig 23 NMT summary model

Neometals Limited															
ASX: NMT	Price: (A\$ps)	0.32		Year end:	Jun	Rating:	Outperform		Up/dn	TSR					
	Mkt cap: (A\$m)	181		Diluted shares (m)	566	Target:	0.40		24%	24%					
ASSUMPTIONS		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	ATTRIBUTABLE MINE OUTPUT							
Exchange Rate	A\$/US\$	0.73	0.75	0.74	0.74	0.74	0.75	Spodumene (kt)							
Lithium Carbonate Equivalent	US\$/t	6125	10366	8225	7150	6875	6750	Mt Marion	kt	-	6	0	0	0	0
Spodumene (6% CIF)	US\$/t	329	603	526	473	455	446	Total	kt	-	6	0	0	0	0
RATIO ANALYSIS		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	Tantalite (k lb)							
Diluted share capital	m	566.4	566.4	566.4	566.4	566.4	566.4	Mt Marion	k lb	-	0	0	0	0	0
EPS (diluted and pre sig. items)	A¢	-0.7	-0.3	0.2	0.2	0.0	0.0	Total	k lb	-	0	0	0	0	0
P/E	x	-46.7x	-96.8x	178.8x	191.1x	1476.8x	6062.6x	Sales							
CFPS	A¢	(1.0)	(0.7)	0.1	0.1	0.0	0.0	Spodumene	kt	-	4	0	0	0	0
P/CF	x	-32.5x	-48.5x	432.3x	602.6x	1033.7x	4243.8x	Tantalite	kt	-	0	0	0	0	0
DPS	A¢	2.0	0.0	0.0	0.0	0.0	0.0	Total	kt	-	4	0	0	0	0
Dividend yield	%	6.3%	0.0%	0.0%	0.0%	0.0%	0.0%	Total LCE produced	kt	-	0.8	0.0	0.0	0.0	0.0
Franking Level	%	0%	0%	0%	0%	0%	0%	FOB cash costs	(A\$/wmt)	-	464	405	413	410	408
Book value per share	x	0.16	0.38	0.38	0.38	0.31	0.31	AISC	(A\$/wmt)	-	686	420	428	424	421
P/Book value	x	2.0x	0.8x	0.8x	0.8x	1.0x	1.0x	FOB Costs (LCE)	(US\$/t)	-	5368	3857	3517	3463	3463
R.O.E. (pre sig items)	%	-4%	-1%	0%	0%	0%	0%	All in Cash Costs (LCE)	(US\$/t)	-	6709	3946	3604	3544	3538
R.O.A. (pre sig items)	%	-5%	-2%	-2%	-2%	-1%	-1%	OPERATIONAL OUTLOOK							
Interest Cover	x	12.5x	2.3x	0.7x	0.8x	1.0x	1.0x								
EBITDA per share	A\$ps	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01								
EV/EBITDA	x	-21.4x	1.1x	1.1x	1.1x	0.9x	0.9x								
EARNINGS		FY16	FY17e	FY18e	FY19e	FY20e	FY21e								
Sales Revenue	A\$m	0	3	0	0	0	0								
Other Revenue	A\$m	0	0	0	0	0	0								
Total Revenue	A\$m	0	3	0	0	0	0								
Operating Costs	A\$m	0	(1)	0	0	0	0								
Operational EBITDA	A\$m	0	2	0	0	0	0								
Exploration Expense/Write-offs	A\$m	0	0	0	0	(1)	(1)								
Corporate & Other Costs	A\$m	(5)	(5)	(4)	(4)	(4)	(4)								
EBITDA	A\$m	(5)	(4)	(4)	(4)	(5)	(6)								
D&A	A\$m	0	(0)	0	0	0	0								
EBIT	A\$m	(5)	(4)	(4)	(4)	(5)	(6)								
Net Interest	A\$m	0	2	6	6	6	6								
Profit Before Tax	A\$m	(5)	(2)	1	1	0	0								
Tax Expense	A\$m	1	0	(0)	(0)	(0)	(0)								
Minorities	A\$m	0	0	0	0	0	0								
Adjusted NPAT	A\$m	(4)	(2)	1	1	0	0								
Significant Items (post tax)	A\$m	88	9	0	0	0	0								
Reported NPAT	A\$m	85	8	1	1	0	0								
CASHFLOW		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	RESERVES AND RESOURCES (100%)							
Net Profit	A\$m	85	8	1	1	0	0	Reserves							
Interest/Tax/D&A	A\$m	(2)	(1)	(1)	(1)	0	0	Mt Marion							
Working Capital/other	A\$m	(89)	(10)	0	0	0	0	Mt							
Net Operating Cashflow	A\$m	(6)	(4)	0	0	0	0	Proved							
Capex	A\$m	(0)	(0)	0	0	0	0	0.0 0.0% 0.0							
Investments	A\$m	89	128	0	0	0	0	Probable							
Sale of PPE and Other	A\$m	(1)	(2)	0	0	0	0	0.0 0.00% 0.0							
Free cash flow	A\$m	83	122	0	0	0	0	Total							
Dividends Paid	A\$m	(11)	(11)	0	0	0	0	0.0 0.00% 0.0							
Debt	A\$m	1	0	0	0	0	0	0.0 0.00% 0.0							
Equity Issuance	A\$m	(0)	(0)	0	0	0	0	Resources							
Other	A\$m	0	0	0	0	0	0	Mt Marion Lithium							
Net Financing Cashflow	A\$m	(10)	(11)	0	0	0	0	Mt							
Net change in cash	A\$m	73	111	0	0	0	0	Measured							
								0.0 0.0% 0 0.0%							
								Indicated							
								28.9 1.35% 390 1.1%							
								Inferred							
								48.9 1.38% 675 1.1%							
								Total							
								77.8 1.37% 1065 1.09%							
								Barrambie TiO2							
								Mt							
								Measured							
								0.0 0.0% 0.0 0.00%							
								Indicated							
								34.7 22.3% 7.7 0.64%							
								Inferred							
								12.5 22.0% 2.7 0.58%							
								Total							
								47.2 22.2% 10.5 0.62%							
BALANCE SHEET		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	EQUITY DCF VALUATION							
Cash	A\$m	73	185	186	186	186	186	Projects							
PP&E & Mine Development	A\$m	0	0	0	0	0	0	A\$m							
Exploration	A\$m	12	12	13	14	14	14	A\$ps							
Total Assets	A\$m	96	220	221	222	406	406	Mt Marion							
Debt	A\$m	0	0	0	0	0	0	0 0.00							
Total Liabilities	A\$m	6	6	6	7	230	230	Undeveloped Resources							
Total Net Assets / Equity	A\$m	90	214	215	216	176	176	16 0.03							
Net Debt / (Cash)	A\$m	(73)	(185)	(186)	(186)	(186)	(186)	Other Projects & Investments							
Gearing (net debt/(nd + equity))	%	(446%)	(647%)	(636%)	(636%)	1,825%	1,823%	40 0.07							
Gearing (net debt/equity)	%	(82%)	(87%)	(86%)	(86%)	(106%)	(106%)	Corporate							
Total asset/debt	(x)	nm	nm	nm	nm	nm	nm	(17) (0.03)							
								Unpaid capital							
								0 0.00							
								Net cash (debt)							
								185 0.33							
								Net Equity Value (@ 8% WACC)							
								224 0.40							
								Price Target							
								(1x NPV) 0.40							

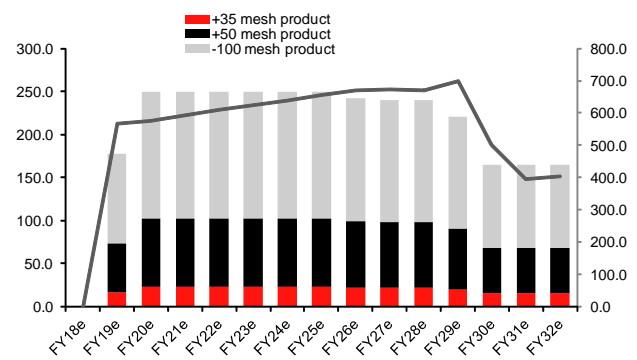
Source: NMT, Macquarie Research, April 2017

Fig 24 SYR summary model

Syrah Resources							Year end:	Jun	Rating:	Outperform	Up/dn	34%		
ASX: SYR	Price: (A\$ps)	2.69					Diluted shares (m)	263.8	Target:	3.60				
	Mkt cap: (A\$m)	710												
ASSUMPTIONS		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	ATTRIBUTABLE MINE OUTPUT	FY16	FY17e	FY18e	FY19e	FY20e	FY21e
Exchange Rate	A\$/US\$	0.75	0.75	0.74	0.74	0.75	0.75	Mine Graphite Production (equity)						
Graphite Flake, 94-97% C, +50 mesh	US\$/t	1,482	1,480	1,196	1,107	1,114	1,121	Balama graphite flake +100 mesh	kt	14.8	66.6	118.4	118.4	118.4
Graphite, Flake, 94-97% C	US\$/t	800	725	502	505	508	511	Balama graphite -100 mesh	kt	31.5	141.5	226.6	166.6	131.6
Spherical graphite (uncoated)	US\$/t	3,225	4,200	5,250	5,500	5,509	5,621	Graphite Production (kt)	kt	46.3	208.1	345.0	285.0	250.0
Recarburiser	US\$/t	824	757	508	522	535	549	W Ave basket price	US\$/t	0	444	602	535	496
								Cash Cost FOB Nacala (US\$/t)	US\$/t	157	266	230	238	245
								Notional Cash Margin	US\$/t	0	178	372	297	251
RATIO ANALYSIS		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	BAM Production (equity)						
Diluted share capital	m	264.2	264.2	264.2	264.2	264.2	264.2	Uncoated spherical	kt	0.0	0.0	12.5	21.3	30.0
EPS (diluted and pre sig. items)	A¢	-5.5	-8.2	-2.0	24.7	61.1	82.7	Coated spherical	kt	0.0	0.0	0.0	21.3	30.0
P/E	x	-49.0x	-33.0x	-136.1x	10.9x	4.4x	3.3x	Recarburiser by-product	kt	0.0	0.0	9.4	47.8	67.5
CFPS	A¢	(2.7)	3.7	(0.7)	47.6	95.9	125.0	Spherical AIC	US\$/t	0	0	3,828	2,594	2,637
P/CF	x	-99.5x	71.9x	-367.3x	5.7x	2.8x	2.2x	Operational EBIT Contribution						
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0	Balama	A\$m	-7	13	90	100	105
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Downstream	A\$m	0	0	27	165	240
Franking Level	%	0%	0%	0%	0%	0%	0%							
Book value per share	x	1.17	1.23	1.48	1.33	1.86	2.71							
P/Book value	x	2.3x	2.2x	1.8x	2.0x	1.4x	1.0x							
R.O.E. (pre sig items)	%	-5%	-7%	-1%	19%	33%	31%							
R.O.A. (pre sig items)	%	-5%	-7%	1%	19%	34%	35%							
Interest Cover	x	12.3x	8.2x	1.4x	10.1x	37.8x	-98.2x							
EBITDA per share	A\$ps	-0.06	-0.09	0.06	0.57	1.29	1.68							
EV/EBITDA	x	-35.4x	-27.8x	49.3x	5.6x	2.0x	0.9x							
EARNINGS		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	OPERATIONAL OUTLOOK						
Sales Revenue	A\$m	0	3	88	280	566	728							
Other Revenue	A\$m	0	0	0	0	0	0							
Total Revenue	A\$m	0	3	88	280	566	728							
Operating Costs	A\$m	0	(7)	(53)	(107)	(204)	(263)							
Operational EBITDA	A\$m	0	(4)	35	173	362	466							
Exploration Expense/Write-offs	A\$m	0	0	0	0	0	0							
Corporate & Other Costs	A\$m	(16)	(20)	(21)	(21)	(22)	(22)							
EBITDA	A\$m	(15)	(24)	15	152	340	443							
D&A	A\$m	(0)	(1)	(11)	(37)	(77)	(100)							
EBIT	A\$m	(16)	(26)	3	115	263	343							
Net Interest	A\$m	1	3	(2)	(11)	(7)	3							
Profit Before Tax	A\$m	(14)	(23)	1	103	256	347							
Tax Expense	A\$m	0	0	(6)	(33)	(82)	(111)							
Minorities	A\$m	0	1	(0)	(5)	(13)	(17)							
Adjusted NPAT	A\$m	(14)	(22)	(5)	65	161	218							
Significant Items (post tax)	A\$m	(0)	0	0	0	0	0							
Reported NPAT	A\$m	(14)	(22)	(5)	65	161	218							
CASHFLOW		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	RESERVES AND RESOURCES (ATTRIBUTABLE)						
Net Profit	A\$m	(14)	(22)	(5)	65	161	218	Graphite Reserves						
Interest/Tax/D&A	A\$m	0	1	17	70	115	119	Project			Mt	% TGC	TGC (mt)	
Working Capital/other	A\$m	7	30	(14)	(9)	(23)	(7)	Balama West			22.6	19.0%	4.3	
Net Operating Cashflow	A\$m	(7)	10	(2)	126	253	330	Balama East			58.8	15.1%	8.9	
Capex	A\$m	(110)	(139)	(153)	(125)	(63)	(77)	Mualia			33.1	16.3%	5.4	
Investments	A\$m	0	0	0	0	0	0	Total graphite reserves (mt)			114.5	16.2%	18.6	
Sale of PPE and Other	A\$m	0	0	0	0	0	0	Graphite Resources						
Free cash flow	A\$m	(117)	(129)	(155)	0	190	253	Project			Mt	% TGC	TGC (mt)	
Dividends Paid	A\$m	0	0	0	0	0	0	Balama West			645.0	10.6%	68.5	
Debt	A\$m	0	0	160	(20)	(80)	(60)	Balama East			546.0	11.0%	60.0	
Equity Issuance	A\$m	140	0	0	0	0	0	Mualia			75.0	11.2%	8.4	
Other	A\$m	0	0	0	0	0	0	Total graphite resources (mt)			1266.0	10.8%	136.9	
Net Financing Cashflow	A\$m	140	0	160	(20)	(80)	(60)	Vanadium Resources						
Net change in cash	A\$m	23	(129)	5	(20)	110	193	Project			Mt	% V2O5	V2O5 (kt)	
								Balama West			645.0	0.10%	670	
								Balama East			546.0	0.27%	1,494	
								Total low grade reserves (kt)			1191.0	0.18%	2,164	
BALANCE SHEET		FY16	FY17e	FY18e	FY19e	FY20e	FY21e	EQUITY DCF VALUATION						
Cash	A\$m	163	34	39	19	130	323	Projects			A\$m	A\$ps		
PP&E & Mine Development	A\$m	156	294	436	524	510	488	Balama graphite			287	1.09		
Exploration	A\$m	1	1	1	1	1	1	Spherical project			570	2.16		
Total Assets	A\$m	324	345	493	612	778	988	Undeveloped Resources			89	0.34		
Debt	A\$m	0	0	50	160	100	20	Other Projects			0	0.00		
Total Liabilities	A\$m	15	19	102	262	286	273	Unpaid capital			0	0.00		
Total Net Assets / Equity	A\$m	310	325	391	350	492	715	Corporate/forwards			(114)	(0.43)		
Net Debt / (Cash)	A\$m	(163)	(34)	11	141	(30)	(303)	Net cash (debt)			131	0.49		
Gearing (net debt/(nd + equity))	%	(112%)	(12%)	3%	29%	(6%)	(74%)	Net Equity Value (@ 12% WACC for Balama, 15% for Spherical)			963	3.65		
Gearing (net debt/equity)	%	(53%)	(10%)	3%	40%	(6%)	(42%)	Price Target			(1x NPV)	3.60		

Source: SYR, Macquarie Research, April 2017

Fig 25 MNS summary model

Magnis Resources							Year end:	Jun	Rating:	Outperform	Up/dn				
ASX: MNS	Price: (A\$ps)	0.74					Diluted shares (m)	465.9	Target:	1.05		42%			
	Mkt cap: (A\$m)	345													
ASSUMPTIONS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	ATTRIBUTABLE MINE OUTPUT	FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	
Exchange Rate	A\$/US\$	0.75	0.74	0.74	0.75	0.75	0.75	Graphite Production (equity)							
Graphite Flake, 97-98% C, +35 mesh, (FOB)	US\$/lt	4,000	4,065	4,172	4,282	4,394	1,669	+35 mesh product	kt	-	-	16.0	22.5	22.5	22.5
Graphite Flake, 97-98% C, +50 mesh, (FOB)	US\$/lt	2,500	2,541	2,608	2,676	2,746	856	+50 mesh product	kt	-	-	56.8	79.9	79.9	79.9
Graphite Flake, 98-99.5% C, -50 mesh, (FOB)	US\$/lt	2,125	2,160	2,216	2,275	2,334	4,641	-100 mesh product	kt	-	-	104.8	147.4	147.4	147.4
								Graphite Production (kt)	kt	-	-	177.7	249.8	249.8	249.8
								W Ave basket price	US\$/t	-	-	2,603	2,671	2,741	2,813
								Cash Cost CIF Europe (US\$/t)	US\$/t	-	-	568	575	593	610
								Notional Cash Margin	US\$/t	-	-	2,035	2,096	2,148	2,203
								Ebitda margin	%	-	-	78%	78%	78%	78%
RATIO ANALYSIS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	Operational EBIT Contribution							
Diluted share capital	m	570.9	570.9	570.9	570.9	570.9	570.9	Nachu	A\$m	-	-	191	275	280	289
EPS (diluted and pre sig. items)	A¢	-2.2	-1.5	27.0	40.1	41.5	43.5								
P/E	x	-34.0x	-50.7x	2.7x	1.8x	1.8x	1.7x	OPERATIONAL OUTLOOK							
CFPS	A¢	(2.5)	(2.0)	34.9	47.6	46.0	48.1								
P/CF	x	-30.2x	-37.7x	2.1x	1.6x	1.6x	1.5x								
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0								
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%								
Franking Level	%	0%	0%	0%	0%	0%	0%								
Book value per share	x	0.02	0.00	0.32	0.67	1.09	1.52								
P/Book value	x	45.4x	-399.2x	2.3x	1.1x	0.7x	0.5x								
R.O.E. (pre sig items)	%	-133%	788%	85%	60%	38%	29%								
R.O.A. (pre sig items)	%	-119%	-5%	54%	51%	38%	31%								
Interest Cover	x	278.0x	2.8x	-103.4x	-36.4x	-20.6x	-14.6x								
EBITDA per share	A\$ps	-0.02	-0.02	0.46	0.66	0.67	0.69								
EV/EBITDA	x	-33.0x	-27.8x	0.8x	-0.2x	-0.8x	-1.5x								
EARNINGS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	RESERVES AND RESOURCES (ATTRIBUTABLE)							
Sales Revenue	A\$m	0	0	350	503	510	524	Graphite Reserves							
Other Revenue	A\$m	0	0	0	0	0	0	Project	Mt	% TGC	TGC (mt)				
Total Revenue	A\$m	0	0	350	503	510	524	F Block							
Operating Costs	A\$m	0	0	(76)	(109)	(111)	(114)		Proved	47.0	4.6%	2.2			
Operational EBITDA	A\$m	0	0	274	394	399	410		Probable	21.5	5.1%	1.1			
Exploration Expense/Write-offs	A\$m	(3)	(1)	(1)	(1)	(1)	(1)	FS Block							
Corporate & Other Costs	A\$m	(10)	(12)	(13)	(13)	(13)	(14)		Proved	3.5	5.5%	0.2			
EBITDA	A\$m	(13)	(14)	260	379	385	395		Probable	4.3	4.9%	0.2			
D&A	A\$m	(0)	0	(18)	(26)	(26)	(26)	Nachu							
EBIT	A\$m	(13)	(14)	242	353	359	369		Proved	50.5	4.6%	2.3			
Net Interest	A\$m	0	5	2	10	17	25		Probable	25.8	5.1%	1.3			
Profit Before Tax	A\$m	(13)	(9)	244	363	376	394	MNS Reserves	Total	76.3	4.8%	3.7			
Tax Expense	A\$m	0	0	(78)	(116)	(120)	(126)	Graphite Resources							
Minorities	A\$m	0	0	(12)	(18)	(19)	(20)	Project	Mt	% TGC	TGC (mt)				
Adjusted NPAT	A\$m	(12)	(8)	154	229	237	248	F Block							
Significant Items (post tax)	A\$m	0	0	0	0	0	0		Measured	59.5	4.6%	2.7			
Reported NPAT	A\$m	(12)	(8)	154	229	237	248		Indicated	39.3	5.1%	2.0			
									Inferred	24.2	5.2%	1.3			
								Total	123.0	4.9%	6.0				
CASHFLOW		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FS Block							
Net Profit	A\$m	(12)	(8)	154	229	237	248		Measured	4.0	5.6%	0.2			
Interest/Tax/D&A	A\$m	(1)	(3)	82	44	26	27		Indicated	5.2	5.1%	0.3			
Working Capital/other	A\$m	(0)	0	(37)	(1)	(1)	(1)		Inferred	1.0	3.5%	0.0			
Net Operating Cashflow	A\$m	(14)	(11)	199	272	262	275	Total	10.2	5.1%	0.5				
Capex	A\$m	(0)	(204)	(27)	(4)	(4)	(4)	Other							
Investments	A\$m	0	255	0	0	0	0		Measured	0.0	0.0%	0.0			
Sale of PPE and Other	A\$m	0	0	0	0	0	0		Indicated	7.5	6.5%	0.5			
Free cash flow	A\$m	(14)	40	172	268	259	271	Total	40.8	6.8%	2.8				
Dividends Paid	A\$m	0	0	0	0	0	0	Nachu							
Debt	A\$m	0	0	0	0	0	0		Measured	63.5	4.7%	3.0			
Equity Issuance	A\$m	13	0	0	0	0	0		Indicated	52.0	5.3%	2.8			
Other	A\$m	0	0	0	0	0	0		Inferred	78.7	6.1%	4.8			
Net Financing Cashflow	A\$m	13	0	0	0	0	0	MNS Resources	Total	194.3	5.4%	10.5			
Net change in cash	A\$m	(1)	40	172	268	259	271	EQUITY DCF VALUATION							
								Projects	A\$m	A\$ps					
BALANCE SHEET		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	Nachu graphite	553	0.97					
Cash	A\$m	6	46	217	485	744	1,015	Undeveloped Resources	112	0.20					
PP&E & Mine Development	A\$m	0	204	213	191	168	146	Unpaid capital	2	0.00					
Exploration	A\$m	1	4	7	10	13	15	Corporate	(68)	(0.12)					
Total Assets	A\$m	11	257	445	694	933	1,185	Net cash (debt)	2	0.00					
Debt	A\$m	0	0	0	0	0	0	Net Equity Value (@ 12% WACC real)	601	1.05					
Total Liabilities	A\$m	1	258	265	311	313	316	Price Target							
Total Net Assets / Equity	A\$m	9	(1)	181	383	620	869								
Net Debt / (Cash)	A\$m	(6)	(46)	(217)	(485)	(744)	(1,015)								
Gearing (net debt/(nd + equity))	%	(172%)	98%	590%	475%	599%	693%								
Gearing (net debt/equity)	%	(63%)	4,304%	(120%)	(127%)	(120%)	(117%)								

Source: MNS, Macquarie Research, April 2017

Fig 26 CLQ summary model

Clean TeQ Holdings								
ASX: CLQ	Price: (A\$ps)	0.86		Year end: Jun		Rating: Outperform	Up/dn	TSR
	Mkt cap: (A\$m)	492		Diluted shares (m)		572.0	Target: 1.50	74%

ASSUMPTIONS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FY23e
Exchange Rate	A\$/US\$	0.76	0.74	0.74	0.74	0.75	0.75	0.75
Nickel Price	(US\$/lb)	4.86	5.05	5.56	5.78	6.12	6.35	7.09
Cobalt Price	(US\$/lb)	17.34	19.00	17.00	17.50	19.50	21.00	17.70

RATIO ANALYSIS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FY23e
Diluted share capital	m	627.2	995.7	992.2	991.2	991.2	991.2	991.2
EPS (diluted and pre sig. items)	A¢	-3.1	-1.7	-1.9	-4.0	3.0	21.2	28.6
P/E	x	-27.8x	-51.0x	-45.0x	-21.3x	28.6x	4.0x	3.0x
CFPS	A¢	(1.6)	(1.4)	(1.9)	(4.0)	3.5	26.7	34.4
P/CF	x	-53.2x	-62x	-46.3x	-21.6x	24.4x	3.2x	2.5x
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Franking Level	%	0%	0%	0%	0%	0%	0%	0%
Book value per share	x	0.17	0.44	0.43	0.39	0.42	0.63	0.92
P/Book value	x	5.0x	2.0x	2.0x	2.2x	2.0x	1.4x	0.9x
R.O.E. (pre sig items)	%	-15%	-3%	-4%	-10%	7%	34%	31%
R.O.A. (pre sig items)	%	-14%	-3%	-2%	-1%	6%	20%	25%
Interest Cover	x	80.2x	7.6x	-8.7x	-0.8x	2.2x	9.1x	16.8x
EBITDA per share	A\$ps	-0.02	-0.02	-0.02	-0.02	0.10	0.38	0.49
EV/EBITDA	x	-26.2x	-18.2x	-44.0x	-70.5x	11.7x	2.5x	1.3x
Free cash flow yield	%	(4%)	(26%)	(51%)	(55%)	(1%)	28%	38%

EARNINGS		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FY23e
Sales Revenue	A\$m	0	0	0	0	243	625	766
Other Revenue	A\$m	0	0	0	0	0	0	0
Total Revenue	A\$m	0	0	0	0	243	625	766
Operating Costs	A\$m	0	0	0	0	(123)	(227)	(266)
Operational EBITDA	A\$m	0	0	0	0	120	398	500
Exploration Expense/Write-offs	A\$m	0	0	0	0	0	0	0
Corporate & Other Costs	A\$m	(16)	(16)	(16)	(17)	(17)	(18)	(18)
EBITDA	A\$m	(16)	(16)	(16)	(17)	102	381	482
D&A	A\$m	(1)	(1)	(1)	(1)	(18)	(43)	(51)
EBIT	A\$m	(16)	(17)	(17)	(17)	85	338	431
Net Interest	A\$m	0	2	(2)	(23)	(38)	(37)	(26)
Profit Before Tax	A\$m	(16)	(14)	(19)	(40)	47	301	405
Tax Expense	A\$m	0	0	0	0	(17)	(90)	(122)
Minorities	A\$m	0	0	0	0	0	0	0
Adjusted NPAT	A\$m	(16)	(14)	(19)	(40)	30	211	284
Significant Items (post tax)	A\$m	0	0	0	0	0	0	0
Reported NPAT	A\$m	(16)	(14)	(19)	(40)	30	211	284

CASHFLOW		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FY23e
Net Profit	A\$m	(16)	(14)	(19)	(40)	30	211	284
Interest/Tax/D&A	A\$m	1	1	1	1	35	81	59
Working Capital/other	A\$m	5	0	0	0	(29)	(27)	(2)
Net Operating Cashflow	A\$m	(10)	(14)	(18)	(39)	35	264	341
Capex	A\$m	(10)	(212)	(419)	(429)	(43)	(23)	(18)
Investments	A\$m	(1)	0	0	0	0	0	0
Sale of PPE and Other	A\$m	0	0	0	0	0	0	0
Free cash flow	A\$m	(21)	(226)	(438)	(469)	(8)	242	323
Dividends Paid	A\$m	0	0	0	0	0	0	0
Debt	A\$m	(0)	0	270	468	62	(133)	(267)
Equity Issuance	A\$m	97	344	7	2	0	0	0
Other	A\$m	0	0	0	0	0	0	0
Net Financing Cashflow	A\$m	97	344	277	470	62	(133)	(267)
Net change in cash	A\$m	76	118	(161)	2	53	108	56

BALANCE SHEET		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FY23e
Cash	A\$m	83	202	41	43	96	205	261
PP&E & Mine Development	A\$m	8	219	638	1,066	1,092	1,072	1,039
Exploration	A\$m	6	6	6	6	6	6	6
Total Assets	A\$m	118	478	766	1,226	1,388	1,668	1,726
Debt	A\$m	3	3	273	741	803	669	403
Total Liabilities	A\$m	10	40	340	838	970	1,040	814
Total Net Assets / Equity	A\$m	108	438	425	388	417	628	912
Net Debt / (Cash)	A\$m	(81)	(199)	232	698	706	465	142
Gearing (net debt/(nd + equity))	%	(294%)	(83%)	35%	64%	63%	43%	13%
Gearing (net debt/equity)	%	(75%)	(45%)	54%	180%	169%	74%	16%

ATTRIBUTABLE MINE OUTPUT		FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FY23e
Syerston Nickel & Cobalt								
Nickel	(t)	0	0	0	0	6,016	15,529	18,800
Cobalt	(t)	0	0	0	0	1,042	2,689	3,255
Scandium Oxide	(t)	0	0	0	0	23	46	52
C1 Cash costs								
Syerston Nickel & Cobalt	(US\$/lb)	nm	nm	nm	nm	1.60	-0.28	0.21
Syerston Scandium	(US\$/kg)	nm	nm	nm	nm	580	539	507
AISC								
Syerston Nickel & Cobalt	(US\$/lb)	nm	nm	nm	nm	2.65	0.79	1.29
Syerston Scandium	(US\$/kg)	nm	nm	nm	nm	658	618	587

SYERSTON NICKEL & COBALT

SYERSTON SCANDIUM

NICKEL/COBALT RESERVES AND RESOURCES					
Reserves					
Syerston	Mt	Ni (%)	Ni (kt)	Co (%)	Co (kt)
Proved	54.9	0.71%	390.0	0.10%	55.0
Probable	41.3	0.58%	240.0	0.10%	41.0
Total Reserves	96.2	0.65%	630.0	0.10%	96.0
Resources					
Syerston	Mt	Ni (%)	Ni (kt)	Co (%)	Co (kt)
Measured	52.0	0.73%	380.0	0.11%	57.0
Indicated	49.0	0.57%	280.0	0.10%	49.0
Inferred	8.0	0.63%	50.0	0.10%	8.0
Total Resources	109.0	0.65%	710.0	0.10%	114.0

SCANDIUM RESERVES AND RESOURCES					
Syerston	Mt	Sc (ppm)	Sc (%)	(Sc t)	(Sc2O3)
Reserves	1.2	582	0.06%	699	1,069
Resources - High Grade	1.5	664	0.07%	996	1,524
Resources - Low Grade	28.1	421	0.04%	11,819	18,083

EQUITY DCF VALUATION				
Projects	Spot prices		Macquarie forecasts	
	A\$m	A\$ps	A\$m	A\$ps
Syerston Nickel & Cobalt	1,040	1.04	1,040	1.04
Syerston Scandium	301	0.30	41	0.04
Unpaid capital & Equity Raising	350	0.35	350	0.35
Resources	67	0.07	67	0.07
Corporate	(114)	(0.11)	(114)	(0.11)
Cash	90	0.09	90	0.09
Debt	(3)	(0.00)	(3)	(0.00)
Net Equity Value (@ 10% real WACC, 12.6% Nominal)	1,731	1.74	1,470	1.48
Price Target				1.50

Source: CLQ, Macquarie Research, April 2017

Important disclosures:

Recommendation definitions	Volatility index definition*	Financial definitions
<p>Macquarie - Australia/New Zealand Outperform – return >3% in excess of benchmark return Neutral – return within 3% of benchmark return Underperform – return >3% below benchmark return</p> <p>Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield</p> <p>Macquarie – Asia/Europe Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%</p> <p>Macquarie – South Africa Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%</p> <p>Macquarie - Canada Outperform – return >5% in excess of benchmark return Neutral – return within 5% of benchmark return Underperform – return >5% below benchmark return</p> <p>Macquarie - USA Outperform (Buy) – return >5% in excess of Russell 3000 index return Neutral (Hold) – return within 5% of Russell 3000 index return Underperform (Sell) – return >5% below Russell 3000 index return</p>	<p>This is calculated from the volatility of historical price movements.</p> <p>Very high–highest risk – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.</p> <p>High – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.</p> <p>Medium – stock should be expected to move up or down at least 30–40% in a year.</p> <p>Low–medium – stock should be expected to move up or down at least 25–30% in a year.</p> <p>Low – stock should be expected to move up or down at least 15–25% in a year. * Applicable to Asia/Australian/NZ/Canada stocks only</p> <p>Recommendations – 12 months Note: Quant recommendations may differ from Fundamental Analyst recommendations</p>	<p>All "Adjusted" data items have had the following adjustments made: Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests</p> <p>EPS = adjusted net profit / efpowa* ROA = adjusted ebit / average total assets ROA Banks/Insurance = adjusted net profit / average total assets ROE = adjusted net profit / average shareholders funds Gross cashflow = adjusted net profit + depreciation *equivalent fully paid ordinary weighted average number of shares</p> <p>All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).</p>

Recommendation proportions – For quarter ending 31 March 2017

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	47.26%	55.50%	38.46%	45.47%	59.09%	48.21%	(for global coverage by Macquarie, 8.20% of stocks followed are investment banking clients)
Neutral	38.01%	29.31%	42.86%	48.77%	37.88%	36.79%	(for global coverage by Macquarie, 8.25% of stocks followed are investment banking clients)
Underperform	14.73%	15.19%	18.68%	5.76%	3.03%	15.00%	(for global coverage by Macquarie, 8.00% of stocks followed are investment banking clients)

Company-specific disclosures:

Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures.

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