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Metals of Africa

COMPANY SNAPSHOT

Reuters/Bloomberg:	MTA.AX / MTA AU
Market cap:	US\$12.5m A\$16.4m
Current price:	A\$0.052
Average daily turnover:	US\$0.04m A\$0.05m
Current shares o/s	316.2m
Free float:	100%

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Ticking the boxes at Montepez

- MTA is a rapidly developing graphite company in Africa's premier graphite district.
- Potential off-take agreements could significantly de-risk the project.
- Definitive Feasibility Study (DFS), due Q4 2016, should highlight the potential economic value of the Montepez resource.
- Company defining quarter with significant news flow expected.

Off-take discussion well advanced

MTA has been in discussions with potential end users from Japan, China, Korea and North America since Q4 2015. This interface has culminated in bulk samples of Montepez product recently being sent to potential end-users for analysis. Positive results from this analysis would then allow MTA and interested end users to begin more detailed price and quantity negotiations. MTA has made a concerted effort to secure binding off-take agreements for its graphite concentrate, rather than the easier to come by, but less reliable, Memorandum-of-Understanding (MOU).

What does off-take mean for MTA?

MTA remains confident of securing an agreement and whilst no timetable has been provided by the company, MTA has indicated that an off-take could be secured by the end of calendar year 2016. The signing of a binding off-take agreement could significantly de-risk the project as it validates the Montepez product, represents a key milestone in project development and has the potential to be transformational for MTA.

Trades at a discount to peers

MTA has been steadily progressing the Montepez project, so far it has: 1) identified two high quality, long life resources in a premier graphite location; 2) released a positive scoping study, soon to be superseded by a DFS, 3) commenced discussions with potential off-take partners, 4) jointly acquired a spherical graphite plant in the USA to supply battery manufacturers with a test product, and 5) released metallurgical testwork results with a concentrate grade of >98% TGC.

Despite this, MTA trades at a significant discount to its peers. As can be seen in the following table, only three listed ASX graphite plays have secured a binding off-take and completed a DFS. The market cap of these companies ranges between A\$50m and A\$880m.

Quality resource

MTA, and neighbour Syrah Resources, have the highest grade resources of the African focused players. While MTA has a much smaller resource of 62mt, the reduced scale of their planned mining activities means that Montepez and Balama have sufficient resources to support a proposed 60-year mining operation. The high grade, continuous and shallow nature of the deposit should make for simple and cost effective open pit mining.

Figure 1: ASX: African graphite companies

Company	Code	Location	Mkt Cap	Resources (Mt)	Grade (%TGC)	Prod Target (tpa)	CAPEX (estimated)	OPEX (estimated)	DFS	Off-take
Syrah Resources	SYR	Mozambique	\$883.6m	1,191.0Mt	11.0%	313,000	US\$144.0m	US\$286/t	✓	✓
Magnis Resources	MNS	Tanzania	\$380.0m	174.0Mt	5.4%	240,000	US\$269.0m	US\$559/t	✓	✓
Volt Resources	VRC	Tanzania	\$79.2m	214.4Mt	5.1%	-	-	-	2Q 2017	1Q 2017
Black Rock Mining	BKT	Tanzania	\$55.0m	131.1Mt	7.9%	52,000	US\$57.0m	US\$458/t	?	?
Kibaran Resources	KNL	Tanzania	\$50.9m	23.3Mt	9.4%	40,000	US\$77.5m	US\$570/t	✓	✓
Sovereign Metals	SVM	Malawi	\$23.8m	86.0Mt	7.1%	111,160	-	-	?	?
Graphex Mining	GPX	Tanzania	\$17.0m	25.1Mt	6.0%	69,123	US\$73.8m	US\$490/t	?	?
Metals of Africa	MTA	Mozambique	\$15.5m	61.6Mt	10.3%	100,000	US\$180.0m	US\$400/t	Q4 2016?	Q4 2016?

SOURCES: MORGANS, IRESS, COMPANY REPORTS

DFS due December 2016 – What could Montepeuz be worth?

- MTA is due to release its Definitive Feasibility Study (DFS) in Q4 this year. The DFS will contain detailed engineering, more refined inputs than those used in the scoping study (+-15% level of accuracy) and produce an estimate of projects economics.
- Along with off-take agreements, DFS documentation is the key point of reference for potential financiers.
- Whilst we await the release of the DFS, we estimate the potential project economics based on the Scoping Study released in February this year.
- Key assumptions used in this analysis are listed below:

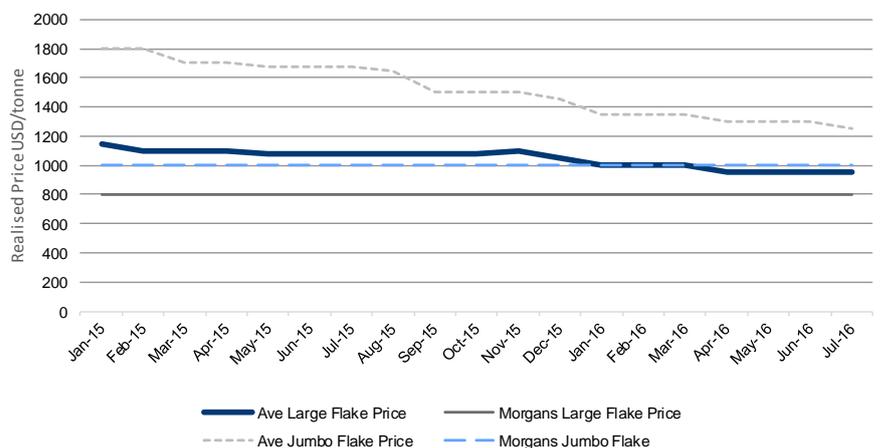
Figure 2: Key assumptions

Production Costs	\$/t (FOB)	Product	Product Split	Annual Prod (t)	Product Revenue	\$/t
Mining	80	Coated Spherical Graphite	25%	25,000	Coated Spherical Graphite	5,000
Processing	115	Carburiser Product	25%	25,000	Carburiser Product	750.0
Transport	120	Jumbo-Super Flake Jumbo Flake	20%	20,000	Jumbo-Super Flake Jumbo Flake	1,000.0
G&A	80	Large Flake	30%	30,000	Large Flake	800.0
Total (\$m)	395	Total	100%	100,000	Weighted Average	1877.5

SOURCES: MORGANS, COMPANY REPORTS

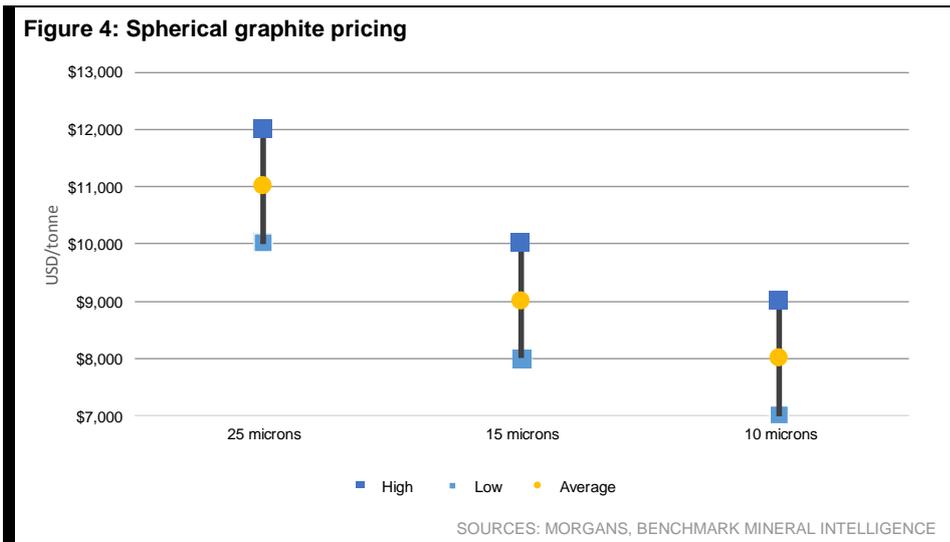
- We estimate capital costs for Montepeuz and the spherical graphite facility at US\$200m (including contingency).
- We have used an 11% discount rate, 0.75USD/1AUD, 3% Royalties and a maximum mine life of 20 years.
- We assume the natural flake products, Jumbo and Large flake, will sell for US\$1,000/t and US\$800/t, respectively.
- We consider these prices to be conservative based on historical pricing and pricing assumed by comparable companies.

Figure 3: Historical flake graphite pricing



SOURCES: MORGANS, BENCHMARK MINERAL INTELLIGENCE

- MTA is exploring the option to produce Spherical Graphite from a secondary processing facility, either in Mozambique or the US. Spheronising creates a higher margin product through an upstream metallurgical process. We expect to see more detail around the capital and operating costs associated with spheronising in the DFS. For the scoping study evaluation we have assumed conservative revenue of US\$5000/t for a 15 micron coated spherical product.



Scoping study valuation

- Based on our assumptions, we estimate an un-risked pre-tax NPV for Montepez between \$300m and \$350m. Applying a risk weighting of 80% implies a risked pre-tax NPV of A\$60-70m or A\$0.19-0.22/share (excluding future potential dilutionary events).

Figure 5: Scoping study valuation

Unrisked Pre-Tax NPV (A\$m)	300 - 350
Risk Discount of 80%	(240) - (280)
Risked Pre-Tax NPV (A\$m)	60 - 70
Shares on Issue (m)	316.24
Risked Pre-Tax NPV (\$/sh)	0.19 - 0.22

SOURCES: MORGANS, COMPANY REPORTS

- Whilst this valuation is speculative and of reduced confidence, it helps demonstrate the size, scope and potential of the Montepez deposit. We look forward to refining the numbers and risk-weighting as more information becomes available.

Figure 6: Collection of bulk samples from surface at Montepez



SOURCE: MORGANS RESEARCH, COMPANY

Figure 7: Bulk samples



SOURCE: MORGANS RESEARCH, COMPANY

Figure 8: Graphite flotation testwork



SOURCE: MORGANS RESEARCH, COMPANY

Making sense of an opaque market

- The two key uses for graphite are in refractories (thermal properties used in bricks and lining of metal production, ceramics and petrochemicals) and anode material for batteries (graphite has become the material of choice for lithium batteries).
- The global graphite market is currently estimated to be 2.2mtpa, of which approximately 50% is natural flake graphite and 50% is synthetic graphite. It is anticipated that natural flake graphite will begin to replace the more expensive synthetic product, but the quantity and timing of this displacement is unclear.
- There has been significant commentary and trading activity around the electric vehicle, lithium-ion battery thematic. Several of the global investment banks have made some very bullish forecasts on future pricing and demand for battery related minerals. This has led to a wave of new players looking to bring new projects on line.
- These new projects are set to significantly alter supply side dynamics. For example, production by the top five (by production target) ASX listed, African focused graphite developers would increase global graphite supply by 68%. Given the size of the current market, demand for graphite would have to increase significantly for prices to remain stable.
- This wave of new producers makes for a competitive landscape and only adds to the importance of securing a long-term, binding off-take agreement to de-risk the project.

Potential catalysts for MTA

- **Binding offtake agreement** - as indicated throughout this note, a binding off-take agreement would be the key de-risking event for the company.
- **Completion of DFS** - will outline the project's economics and allow the company to commence discussion with potential fanciers.
- **Metallurgical results** - awaiting results of bulk samples from potential end users and further testwork results from the US spherical plant.
- **Corporate rebrand** - to reflect the company's focus on graphite and battery related minerals.
- **Strengthening of the Board** - to assist with the company's transition from explorer to developer.
- **Award of Mining License** - application has been lodged with relevant authorities and, if approved, would be awarded in the coming months.

Key risks

Off-take

Graphite is not sold into an open market, it is an opaque and immature market. Graphite is a specialised industrial commodity with a number of different applications and end users. Inability to secure off-take may impede financing and project viability.

Commodity prices

Graphite pricing is variable and depends on the quality of the product. If MTA cannot secure pricing at the levels estimated in mining studies, it would affect project viability.

Financing

Mining is a capital intensive industry and failure to secure financing would limit the company's ability to develop the projects.

Metallurgy

While the company has completed positive metallurgical testwork to date, further testwork is required. Poor metallurgical results from potential end-users would limit the company's ability to secure off-take and hence financing.

Sovereign risk

While Mozambique has a long established mining industry, any changes to government legislation, the fiscal regime and foreign ownership regulations may have a damaging effect on MTA.

Exchange rate

MTA does not expect to earn revenue in the near future. In Mozambique, costs are denominated in USD. Graphite prices and revenues are commonly denominated in USD.

Summary

MTA continues to tick the right boxes at Montepuez. We look forward to watching MTA as it approaches several key milestones and price catalysts in the December quarter.

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