Triton Minerals

MoUs and financing

Industry interest in Ancuabe increases

Metals & mining

Critical to the development of any opaquely traded commodity project is establishing an end-customer network. To this end, Triton Minerals (TON) has forged a number of pre-commercial agreements covering up to 80% of the output from its future Ancuabe graphite mine in Mozambique. This note highlights these memorandums of understanding (MoUs), as well as some background to the companies with which the MoUs were signed. We also consider the effect of mining higher grades for longer from the company's T16 deposit – a key future catalyst to our valuation.

Year end	Revenue (A$m)	PBT* (A$m)	EPS* (c)	DPS (c)	P/E (x)	Yield (%)
12/15	0.0	(5.2)	(3.6)	0.0	N/A	N/A
12/16	1.8	(2.1)	(0.5)	0.0	N/A	N/A
12/17e	0.0	(2.5)	(0.4)	0.0	N/A	N/A
12/18e	0.0	(4.6)	(0.5)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Strong support for high-quality Ancuabe product

Ancuabe graphite has been proven by metallurgical testing to be highly suitable for use in expandable graphite applications. In particular, the T16 deposit is a key focus as it could yield the highest run-of-mine grades (current indicated grade is 7.4% TGC), compared to the T12 (5.8% TGC) deposit that is also considered a key ore stream to the future Ancuabe mine.

Valuation up 12% on TON share price increase alone

We revise our valuation only to reflect the current 9.4c TON share price (previously 5.0c), which results in a reduction in dilution and an uplift of 17% in the Ancuabe value to 15.6c (previously 13.3c). To this can be added a further 9c (based on a discounted valuation of the company's very large additional resources at Balama and Nicanda Hill/West) for a total potential value of 24.6c (previously 22c). With further catalysts still to come in the form of the Ancuabe feasibility study outcome (we expect this to have a moderate effect on TON's shares) to finalising offtake agreements on commercial terms (this is likely to a have strong positive effect on TON's share price as this will secure future revenues at specific volumes and prices), it is worth noting that our total valuation increases to 26.0c/share at a share price of 12c, and 26.6c/share at 14c. Our valuation uses a 10% discount rate to reflect general equity risk and US$1,369/t basket price for Ancuabe graphite products. Further to this we highlight the potential for higher grades to be mined from the T16 deposit. Currently a grade of between 7.1% and 7.3% TGC is to be processed from the start of the mine's life through to year 8. For illustrative purposes only, if this level of grade could be mined through to year 18, our base case 15.6c DCF value of Ancuabe would increase significantly, by 30% to 20.4c.

12 September 2017

Price	**A$0.09**
Market cap	**A$62m**

Net cash (A$m) at end June 2017	3.4
Shares in issue	657.8
Free float	88%
Code	TON
Primary exchange	ASX
Secondary exchange	N/A

Share price performance

%	1m	3m	12m
Abs	88.2	92.0	57.9
Rel (local)	87.2	90.0	48.7
52-week high/low		A$0.04	A$0.09

Business description

Triton Minerals is an exploration and development company. Its main focus is the development of its graphite exploration licences in Mozambique, initially the Ancuabe graphite project, which is being developed to feed into the high growth expandable graphite and nascent, but high-growth, lithium-ion battery sector.

Next events

Ancuabe feasibility study	Start CY18

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New Ancuabe high-grade drilling results could lift value

Resource definition drilling at the T16 deposit at Ancuabe should now be completed. This drilling was undertaken to provide a significantly higher total graphitic carbon (TGC) grade for mining. The current Ancuabe scoping study (April 2017) used T16 resources to maintain a grade in years 1 to 8 of 7.1% to 7.3%. Following year 8, grades reduce to levels similar to that of the T12 deposit resource tonnages, which average 4.9% and 5.8%.

Drilling out greater tonnages at a greater level of geological confidence will allow Triton to potentially extend the higher-grade years beyond the current ninth year of the scoping study mine plan.

For illustrative purposes only, adjusting the TGC grade to the same level as in years 1-9, through to year 18 would increase our 15.6c Ancuabe DCF to 20.4c, a significant 30% uplift. This underlines the importance of Triton's current T16 resource definition drill programme.

The latest T16 drill results show there is a strong indication for grades to be even higher than the c 7% used in the above valuation sensitivity analysis. A summary is given in Exhibit 1 below.

Exhibit 1: Drill result highlights from August T16 campaign

Hole ID	Intercept (m)	TGC (%)	Depth from (m)
IVD051	14.4	9.3	34.8
IVD051	12.0	10.0	55.9
IVD055	15.1	10.0	32.0
IVD056	22.2	6.3	14.1
IVD057	23.7	6.9	21.8
IVD058	17.4	7.2	53.3

Source: Trion Minerals

Two MoUs cover up to 80% of Ancuabe production

Triton's recent announcements (16 and 29 August) describe two pre-commercial MoUs concerning the potential offtake of Ancuabe graphite output.

Sinoma Overseas Development

The first announcement concerns a framework agreement with Sinoma Overseas Development, a Chinese company that is a subsidiary of China National Building Material Corporation, stated as China's largest building materials conglomerate and a Fortune 500 company.

The framework agreement covers the potential for Sinoma to off-take 50% of the graphite concentrate production, which at the scoping study output of 60ktpa would be 30ktpa. Other matters covered in the MoU are:

- Engineering, procurement and construction services relating to the future build-out of Ancuabe's processing plant.
- Debt financing arrangements for the construction of the Ancuabe Graphite Project (AGP).
- Project-level investment in the AGP.

Sinoma Overseas Development is the overseas branch of Sinoma International Engineering, a Chinese government-administered enterprise. Whether this adds weight to the argument that Chinese authorities are active in the refocusing of Chinese company supply chains to sources abroad is up for debate. However, the commitment by the Chinese state to cleaning up its environment, exemplified by President Xi Jinping's comments to "make our skies blue again" may well lend support to the Chinese wishing to source raw materials from abroad.

Triton will build the Ancuabe project to meet not only Mozambiquan environmental legislation (which is already aligned to western standards), but also to western standards, thereby appeasing the concerns of the western investor as to potential damage that might occur from mine development.

Qingdao Tianshengda Graphite Co

Triton's other MoU (announced on 29 August) is with Qingdao Tianshengda Graphite Co (Tianshengda) for up to 15,000tpa of Ancuabe graphite for an initial five-year term. Offtake would be for graphite across all flake sizes. Triton is now sending Ancuabe graphite samples to Tianshengda for quality assessment test works – crucial to this MoU being converted into commercial terms.

The two MoUs therefore cover at least 75% of Ancuabe's future output. Triton states it is 80%, and we can only see this difference as being due to some rounding up of exact figures not explicit in the MoUs.

The negotiations with Tianshengda are especially interesting considering this company is itself a producer of natural flake graphite from its own mine in Shandong Province, China. Indeed, this outsourcing of raw material supply may add support to the widespread media reporting recently that the long-touted clean-up of smaller-scale as well as larger-scale polluting mining operations in China is starting to affect raw material supply and, by extension, prices. It is likely that we could start to see further announcements similar to the MoU agreed between Triton and Tianshengda.

According to Tianshengda's own website, it currently produces 30ktpa of graphite product from its own mining area (see photos below). This mining area covers 20,000,000 square metres.

Exhibit 2: Qingdao Tianshengda Graphite Co ore photo (LHS) and open pit operation (RHS)

Source: Qingdao Tianshengda Graphite Co. website

Valuation

As Triton makes the transition from exploration to development and production, the investment opportunity remains clear. The results of the 2017 scoping study of Ancuabe, and the NPV of the proposed mine, also make the current valuation of the company's shares look attractive. Our valuation assumptions are set out on the next page.

Assumptions

We have based our revenue forecast on the April 2017 Ancuabe scoping study. Broadly, the headline results of the study are as follows:

Exhibit 3: Project assumptions

Variable	Assumption
Graphite concentrate basket price	US$1,369/t
Payback period	Between 2.7 and 4.8 years
Discounted NPV (10)	US$128m to US$246m (or US$75m on indicated resource alone)
Life of mine	35 years (entire resource base)
Pre-production capex	US$83m
Operating cost	US$601/t
Annual production	Up to 60,000tpa

Source: Triton Minerals, Edison Investment Research

The following table provides the basket price breakdown for one tonne of Ancuabe graphite concentrate free-on-board (FOB) at the port of Pemba.

Exhibit 4: US$1,369/t basket price breakdown (US$/t)

Annual production	Up to 60,000tpa graphite concentrate
Production per size fraction	
+500 micron	2,710-3,780tpa
-500+300 micron	10,150-15,360tpa
-300+180 micron	11,010-15,360tpa
-180+150 micron	4,515-6,300tpa
-150+75 micron	7,310-10,200tpa
-75 micron	7,310 0 10,200tpa
Product pricing	US$/t
+500 micron	2,877
-500+300 micron	2,125
-300+180 micron	1,499
-180+150 micron	1,000
-150+75 micron	736
-75 micron	571
Basket price	US$1,369 FOB Pemba

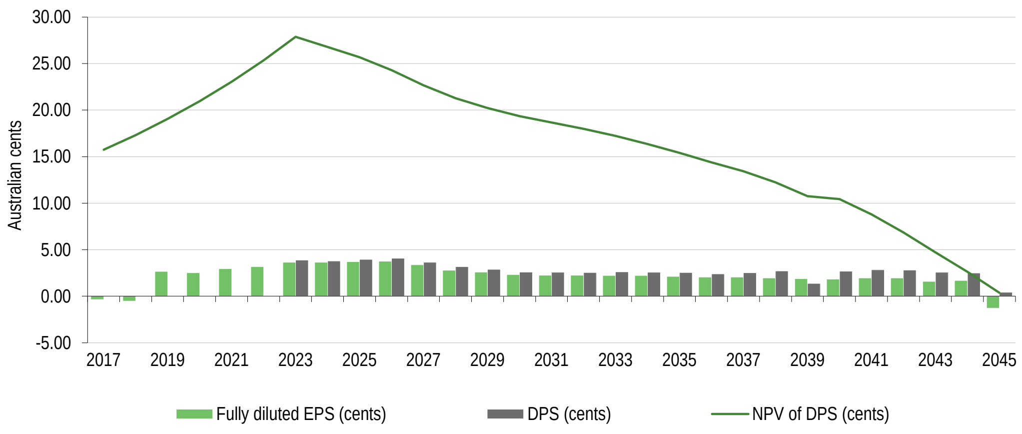
Source: Triton Minerals, Edison Investment Research

Our model assumes that Triton develops Ancuabe as outlined in the scoping study, which states a capex figure of US$83m (A$110m at an A$/US$ forex rate of 1.25) plus a further US$9m two years later. We further assume that the company will pay for the development and construction of the mine on a 75/25 debt/equity basis. For the purposes of our model, to maintain maximum corporate financial leverage (net debt/[net debt + equity]), we consequently make the assumption that Triton will have to raise A$25m in equity. Again, for the purpose of our model, we calculate the equity portion to be raised at the prevailing share price (equating to 74% dilution), on completion of the DFS at the end of 2017. We assume an interest charge on the debt portion of the financing of 9%.

Net present value of dividends

On the basis outlined above, we have estimated the DPS, EPS and dividends from the model Ancuabe mine, from the proposed start-up in 2018 through commercial production to closure at the end of the full modelled mine life in 2045.

Exhibit 5: Valuation of dividend stream



Source: Edison Investment Research

Once financed, Ancuabe's value to shareholders of Triton is now 15.6c in 2017 (previously 13.3c), rising to 20.9c in 2020 (previously 17.7c), and peaking at just under 28c cents in 2023 (previously just over 23c). The peak at 2023 is a function of discounting the cash flows, and has nothing to do with the scheduling of the mine or peak estimated revenue.

In-situ graphite resource valuation – to be revised for new data

The scoping study was based on the increased JORC-compliant resource at Ancuabe released by the company in April 2017. This is to be revised for the company's recently completed drill campaign (see drill result highlights in Exhibit 1), which should increase T16 tonnages, confidence levels and potentially the average deposit TGC grade.

Exhibit 6: Ancuabe resources

Ancuabe resource – April 2017 for T12 and T16 deposits	Classification	TGC (%)	Million tonnes	Contained graphite (Mt)
	Indicated	5.9	9.2	0.6
	Inferred	6.5	18.6	1.1
Total	Indicated & Inferred	6.04	27.9	1.7

Source: Triton Minerals

On the basis of Edison's average global in-situ valuation attributed to undeveloped graphite resources (US$11.38/t of indicated; US$2.01/t of inferred), the in-situ value of the resource at Ancuabe alone is US$8.5m (A$11.2m), which equates to A$0.013 per share.

Triton's non-core resources offer upside for later

Ancuabe is Triton's initial focus, but the company has code-compliant (JORC 2012) resources for its two Balama North deposits, Cobra Plains and Nicanda Hill, and for Nicanda West. They are outlined in the exhibits below for reference only; they are not the initial focus of Triton's new battery and expandable graphite development strategy. It is worth noting that they are some of the largest graphite resources (by tonnage) in the world and if the fire-retardant building materials (FRBM) and LiB markets develop in line with forecasts, Triton's management says it will revisit these deposits to understand their future viability for development.

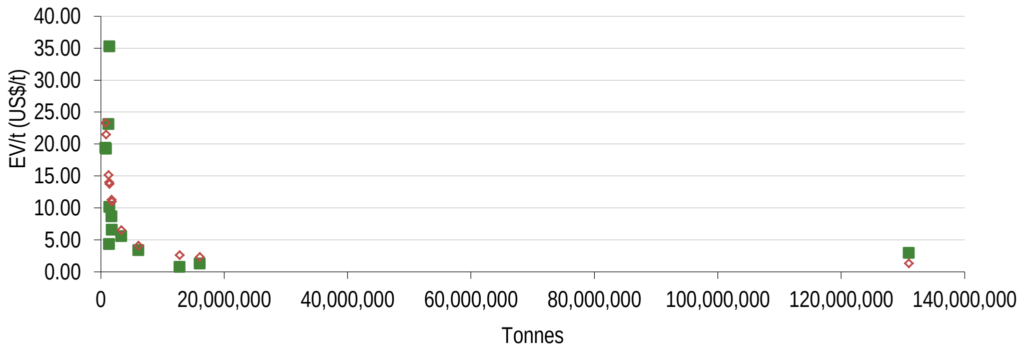
Valuing the total graphite resource which the company has in inventory shows that, in addition to the resource at Ancuabe, it has a much larger graphite inventory in the region.

Exhibit 7: Triton Resources total company resources				
Deposit	Classification	TGC (%)	Million tonnes	Contained graphite (Mt)
Ancuabe	Indicated	6	9.2	0.55
	Inferred	6	18.6	1.126
Nicanda West	Inferred	6.6	30	1.968
Balama North – Cobra Plains	Inferred	5.2	103	5.7
Balama North – Nicanda Hill	Indicated	11.3	369	41.7
	Inferred	11.1	1,061	117.8

Source: Triton Minerals

We have analysed the above additional graphite resources using company EV/t data viewed against resource size. The following exhibit demonstrates that as a company drills out more in-situ resources, the market, in general, applies a reducing value to them. Further background to this analysis can be found on pages 29-30 of our sector report Normalisation augurs well for exploration, published in October 2016.

Exhibit 8: Graphite in-situ resource multiple (US$/t) vs size (t) for a selection of graphite explorers (green squares). Red diamonds indicate trace of line-of-best-fit



Source: Edison Investment Research

On the basis of the above analysis, we have applied a 9c valuation for the 165Mt of additional contained graphite (indicated and inferred) delineated at Balama and Nicanda Hill and Nicanda West.

Nicanda Hill vanadium for free

Nicanda Hill is a combined graphite/vanadium deposit; which is to say that in addition to the graphite resource outlined above, the deposit also contains a world-class vanadium resource.

Exhibit 9: Nicanda Hill vanadium resources				
Nicanda Hill vanadium resource	Classification	Million tonnes	Grade (V_2O_5%)	Contained V_2O_5 (Mt)
	Indicated	369	0.26	0.96
	Inferred	1,061	0.27	2.86
Total	Indicated & Inferred	1,430		3.82

Source: Triton Minerals. Note: Vanadium grade and consequent contained V_2O_5 figures are provided as a guide and reflect the October 2014 maiden mineral resource report. However, no vanadium figures were given in the restated September 2016 report as the metallurgical test work had not been completed.

Triton states it could not develop the Nicanda Hill prospect into a vanadium mine alone; in order to work, the project would have to be shown to be economically feasible as a combined graphite and vanadium operation. It is still staggering to observe that the Nicanda Hill resource contains almost 4mt (8.8bn lbs) of vanadium pentoxide (V_2O_5). Vanadium pentoxide currently sells in the range of $4.50-6.20/lb with price increases of 11% ytd (source: Bloomberg). This is likely to have been driven by supply-side constraints out of China as vanadium derived from magnetite slags from the steel industry have been replaced by higher-quality haematite iron ores that yield no vanadium as a by-product. Further, this scenario has driven vanadium from a situation of structural oversupply to a commodity now undersupplied.

Sensitivities

Although some technical risks remain (resource and reserve certainty, engineering, metallurgy, environmental), the company's recent scoping study has demonstrated that the proposed Ancuabe mine has the potential to be quite robust. As Triton completes its feasibility study on Ancuabe, we expect that these technical risks will fade further into the background over the remainder of 2017. A key de-risking event will be the release of the definitive feasibility study by the end of 2017.

China's recognition of London tower block fire

China's own revised building regulations resulted from a similar tragedy to the one London experienced in June 2017 (at Grenfell Tower). Management states there is renewed interest and reported demand for expandable graphite for use in flame-retardant building cladding materials in China. Following a tower block fire in Shanghai in 2010, China forced changes to building regulations, including the removal of non-mineral core flame retardants. Mineral core-type flame retardants are now the standard, and predominantly use expandable graphite as it acts both as a barrier and suppressor to the spread of fire.

Valuation sensitivities

We have performed a quantitative sensitivity analysis of our base case valuation. As can be seen, the greatest sensitivities lie in achieved revenues, and in the share price assumed in the event of a potential equity raise (our base case assumes the current share price of 9c).

Exhibit 10: Valuation sensitivities

Sensitivity to change in revenue							
% change in revenue	-30	-20	-10	Base case	10	20	30
NPV ($A) cents/share	0.5	5.4	10.6	15.6	21.2	26.5	31.9
Delta	-97%	-66%	-33%	0%	33%	67%	101%
Sensitivity to change in Operating Cost							
% change in costs	-30	-20	-10	Base case	10	20	30
NPV ($A) cents/share	23.8	21.1	18.5	15.6	13.3	10.7	8.1
Delta	50%	33%	16%	0%	-16%	-33%	-49%
Sensitivity of change in Equity Raise							
Price of equity raise		0.05	0.07	0.094	0.12	0.14	0.16
NPV (A$) cents/share		12.6	14.4	15.6	17.0	17.6	18.1
		-21%	-9%	0%	7%	11%	14%

Source: Edison Investment Research

Financials

Triton had cash at hand of A$3.4m at 30 June 2017, following H1 net cash outflows from operating activities of A$1.2m, net cash outflows from investing of A$2.3m (predominantly capex) and a minor A$0.1m in net proceeds from raising share capital. Post balance sheet date, Triton Minerals announced (on 29 August 2017) that it had received A$1.22m from its Creditors' Trust, which was established during an earlier period of voluntary administration. In addition, Triton's cornerstone investor, Shandong Tianye, committed A$1.23m via a placement using the creep provisions of the Corporations Act (announced on 10 July). We consider that Triton's cash position at current cash burn rates should be sufficient to complete its feasibility study, following which we would expect the company to enter into discussions with future graphite customers, as well as to explore more conventional debt and equity routes to secure Ancuabe development capital.

Exhibit 11: Financial summary

A$'000s	2015	2016	2017e	2018e	2019e
December	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS					
Revenue	1	1,769	0	0	103,428
Cost of Sales	0	0	0	0	(51,918)
Gross Profit	1	1,769	0	0	51,510
EBITDA	(5,227)	(2,073)	(2,523)	(4,558)	46,752
Operating Profit (before amort. and except.)	(5,257)	(2,102)	(2,552)	(4,587)	46,204
Intangible Amortisation	0	0	0	0	0
Exceptionals	(93)	(32,389)	0	0	0
Other	(7,451)	(428)	100	200	0
Operating Profit	(12,800)	(34,919)	(2,452)	(4,387)	46,204
Net Interest	52	5	35	17	(8,832)
Profit Before Tax (norm)	(5,205)	(2,098)	(2,517)	(4,570)	37,371
Profit Before Tax (FRS 3)	(12,749)	(34,915)	(2,417)	(4,370)	37,371
Tax	0	0	0	0	(11,211)
Profit After Tax (norm)	(12,656)	(2,525)	(2,417)	(4,370)	26,160
Profit After Tax (FRS 3)	(12,749)	(34,915)	(2,417)	(4,370)	26,160
Average Number of Shares Outstanding (m)	355.3	517.2	664.3	805.3	939.8
EPS - normalised (c)	(3.6)	(0.5)	(0.4)	(0.5)	2.8
EPS - normalised and fully diluted (c)	(3.6)	(0.5)	(0.3)	(0.5)	2.7
EPS - (IFRS) (c)	(3.6)	(6.8)	(0.4)	(0.5)	2.8
Dividend per share (c)	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)	N/A	N/A	N/A	N/A	49.8
EBITDA Margin (%)	N/A	N/A	N/A	N/A	45.2
Operating Margin (before GW and except.) (%)	N/A	N/A	N/A	N/A	44.7
BALANCE SHEET					
Fixed Assets	39,634	9,013	12,043	115,124	119,767
Intangible Assets	16,522	8,765	11,824	11,824	11,824
Tangible Assets	95	138	109	103,189	107,832
Investments	23,016	110	110	110	110
Current Assets	946	8,354	3,495	68	15,771
Stocks	0	0	0	0	8,619
Debtors	545	1,319	0	0	7,084
Cash	344	6,968	3,428	0	0
Other	58	68	68	68	68
Current Liabilities	(3,740)	(641)	(224)	(80,687)	(82,625)
Creditors	(3,740)	(641)	(224)	(392)	(3,893)
Short term borrowings	0	0	0	(80,295)	(78,732)
Long Term Liabilities	(6,648)	(6,741)	(6,741)	(6,741)	(6,741)
Long term borrowings	0	0	0	0	0
Other long term liabilities	(6,648)	(6,741)	(6,741)	(6,741)	(6,741)
Net Assets	30,192	9,986	8,573	27,764	46,172
CASH FLOW					
Operating Cash Flow	(4,528)	(6,862)	(1,620)	(4,390)	26,798
Net Interest	52	5	35	17	(8,832)
Tax	0	0	0	0	(11,211)
Capex	(10,490)	(2,145)	(3,059)	(103,110)	0
Acquisitions/disposals	0	0	0	0	0
Financing	13,808	15,650	1,156	23,760	0
Dividends	0	0	0	0	0
Net Cash Flow	(1,158)	6,649	(3,488)	(83,723)	6,754
Opening net debt/(cash)	(1,497)	(344)	(6,968)	(3,428)	80,295
HP finance leases initiated	0	0	0	0	0
Other	(5)	(25)	(51)	0	(0)
Closing net debt/(cash)	(334)	(6,968)	(3,428)	80,295	73,541

Source: Company accounts, Edison Investment Research

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