

Ticker: SVM AU **Cash:** ~A\$18m **Project:** Kasiya / Nsaru, Malingunde
Market cap: A\$225m **Price:** A\$0.455/sh **Country:** Malawi
REC. (unc): BUY PT (unc): A\$1.65/sh RISK RATING (unc): HIGH

In our view, last week's expanded scoping study, although providing a handy beat on our forecast based largely on improved grade and scheduling in early years, simply comes with no surprises. However, we would urge readers not to see that as 'nothing new', quite the opposite, but to see this as a validation of the frankly disruptive nature of this 'beyond tier 1 asset', exemplified by the US\$1.2bn NPV_{10%} for just US\$372m capex. Remarkably, this still only sees 34% of the MRE processed over a 25-year life. As peers take state-funding for tough-to-survive-the-cycle assets, in the words of Tina Turner, we think Kasiya is 'simply the best'. The project and commissioning won't be risk free of course, but a full site visit note here more than satisfied any pre site-visit risks / concerns we had. In short, the hydro mining and on-infrastructure location, plus location in fiscally and security-stable Malawi (compared to neighbors Mozambique and Tanzania) adds to the structural advantages of the geology. Meanwhile the low-CO₂ graphite and rutile similarly add to the already ESG friendly hydro/solar power and rolling pit remediation. As such, **we maintain our BUY rating and our A\$1.65/sh PT** based on a 0.5xNAV multiple for Kasiya, holding the 1.2Bt of unmined material at just 0.15% in-situ. Engineering work required around hydro mining and processing will now commence in earnest, with bulk samples and test-mining to provide further de-risking. Looking forward, oddly, we see M&A as the biggest risk. For example, for a major like Rio Tinto, Sovereign's market cap represents just 2.6 days of FCF, yet could potentially provide 75 years of graphite and low-CO₂ titanium feed, while leaving Malawi with not just a life-changing GDP contribution, but a potential move from subsistence farming to commercial farms on rolling-backfilled pits. Simply the best.

Table 1. Mining and economic parameters of expanded scoping study against SCPe + new estimates

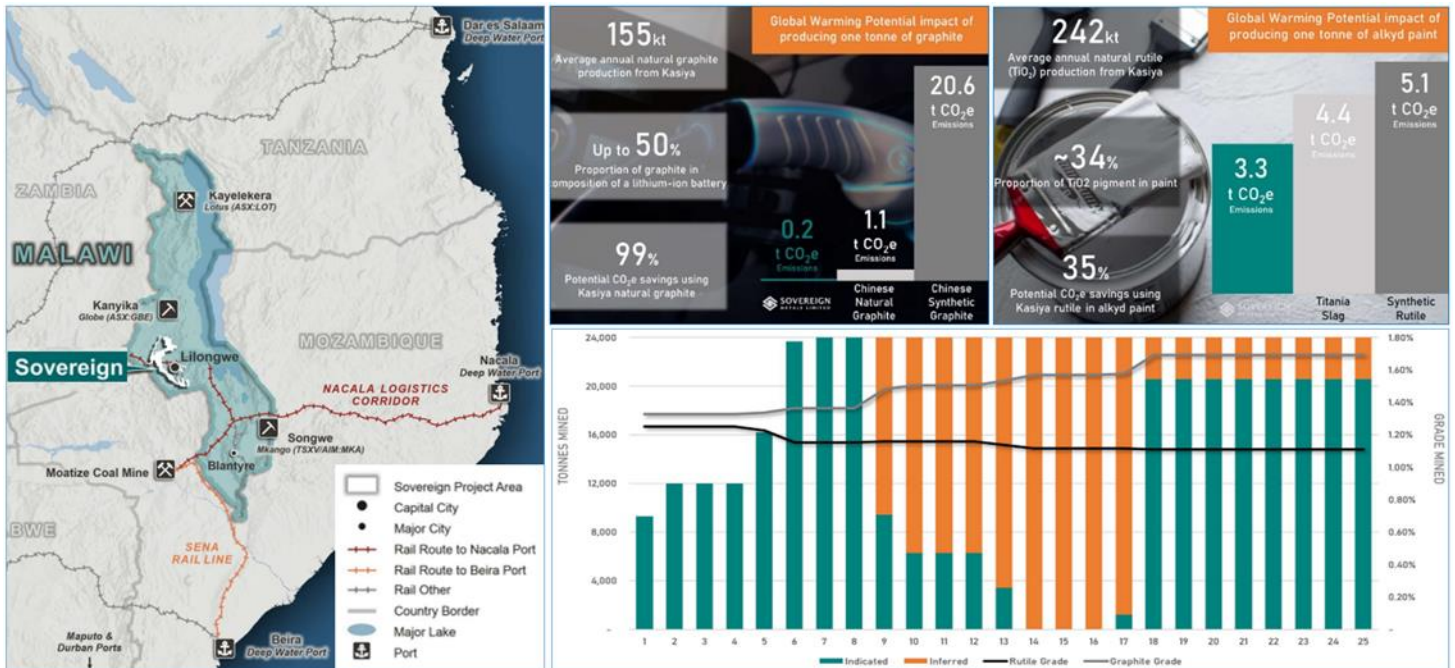
Kasiya 4Q21 vs 2Q22 scoping	SVM			SCP			Kasiya 4Q21 vs 2Q22 scoping	SVM			SCP		
	Old	New	Δ	Old	New	Δ		Old	New	Δ	Old	New	Δ to old
Key inputs and NPV													
Mining inventory (Mt)	298	541	82%	595	541	-9%	LOM revenue (US\$m)	6,266	12,038	92%	12,324	12,053	-2%
ROM grade (% rutile)	1.06%	1.14%	8%	1.05%	1.14%	9%	LOM revenue (US\$/t)	21.1	22.2	6%	20.7	22.3	8%
Salesable grade (% graphite)	1.12%	1.15%	3%	1.08%	1.15%	7%	LOM cost (US\$/t)	7.56	5.86	-22%	7.49	6.97	-7%
Rutile recovery (%)	96%	98%	2%	96%	98%	3%	LOM revenue / cost (x)	2.8	4.1	47%	2.8	3.2	16%
Graphite recovery (%)	62%	62%	0%	62%	62%	1%	Build capex (A\$m)	455	510	12%	775	510	21%
LOM throughput (Mtpa)	12	22	80%	23	22	-4%	Expansion capex (A\$m)	-	426	-	426	-	-
Rutile production (kt pa)	122	242	98%	227	242	7%	Sustaining capex (A\$m)	148	327	121%	237	327	38%
Graphite production (kt pa)	80	155	94%	149	155	4%	Rutile price (US\$/t)	1,346	1,308	-3%	1,346	1,308	-3%
Rutile Y1-3 (kt pa)	-	-138	-	115	138	21%	Graphite price (US\$/t)	1,085	1,085	0%	1,085	1,085	0%
Graphite Y1-3 (kt pa)	-	-68	-	103	68	-34%	Discount (%)	10.0%	10.0%	0%	10.0%	10.0%	0%
Mining cost (US\$/t)	1.77	1.76	-1%	1.77	1.76	-1%	NPV post-tax (A\$m)	937	1623	73%	1557	1621	4%
Processing cost (US\$/t)	2.69	2.66	-1%	2.69	2.66	-1%	Less 10% minority (A\$m)	-	-	-	1390	1440	4%
G&A (US\$/t)	0.64	0.62	-3%	0.64	0.62	-3%	Asset IRR post-tax (%)	36%	36%	0%	25%	29%	16%
Trnspt to port (US\$/t)	0.86	0.82	-5%	0.85	0.82	-3%	Payback (years)	2.50	2.60	4%	3.75	3.00	-20%
							Mine life (years)	25	25	0%	27	25	-6%

Source: SCP estimates

'Simply the best' as A\$1.6bn NPV on expanded scoping beats, and still only covers 1/3 of MRE

Last week's expanded scoping study on the Kasiya rutile-graphite deposit in Malawi now incorporates the previously reported lift in MRE from 605Mt to 1,775Mt. The new study shows a 541Mt inventory supporting a 25-year mine life at 12Mtpa lifting to 24Mtpa from Y5. Grades of 1.14% rutile and 1.15% salable graphite thus support plateau production of 260ktpa rutile and 170ktpa graphite (up from 122ktpa and 80ktpa, respectively). Initial capex of A\$510m reflects a 12% lift from 4Q21 estimates but remains lower than peers requiring new road/rail and port, which are in place here. With a slightly lower US\$1,308/t price deck (flat US\$1,085/t graphite), the Y5 expansion lifts the NPV_{10%} 73% from A\$937m to A\$1,623m. Sovereign will now continue to market the products for offtake in parallel with the commencement of the PFS. For engineering works, recruitment of an owner's team and consultants in underway for 2H22 start. Some residual drilling is required for a maiden reserve for the PFS, which will be done in tandem with bulk metallurgy and continued ESIA data collection, ultimately leading to permitting.

Figure 1. (A) Plan map of transport corridor, (B) CO₂e studies, and (C) LOM production graph



Source: SCP estimates

Our view: beat on grade more than offsets staged capex, de-risking trumps both

Starting with the rocks, and reflecting ‘starting in the best bits’, rutile grades are up 8% on prior studies / our forecast, with saleable graphite (higher-value coarser subset) saw a 3% lift, but 7% beat on our forecast. This more than offset tonnes of 541Mt against our 595Mt forecast – with >1Bt of ‘spare’ resource, tonnes are certainly not an issue here. Combined with a small lift in recovery, this drove a beat (previously based on simple doubling of old PEA) with plateau rutile and graphite 7% and 4% ahead of our forecast, respectively. Based on a slightly lower rutile price deck this drove ~flat revenue. With unit costs actually slightly down from economies of scale offsetting inflation, the higher grade flowed through to a pro-forma (~8%) drop in rutile and graphite unit costs, a good win. Initial capex has lifted 12% since 4Q21, an expected inflation impact. However, as noted in more detail later in this report, while plant capex is very close to peer producing and development assets, overall costs are far lower for the simple reasons that unlike peers, SVM doesn’t need new road/rail, or a new port, an excellent structural advantage. The overall capex for stage 1 and 2 is ~20% above our forecast with fewer economies of scale on phase two, plus more inflation, than we expected. Net net the grade improvement more than offsets capex creep for a lift in our own NPV_{10%} of +4% from A\$1,557m to A\$1,621m (mirroring published A\$1623m). However, this new NPV not just (i) an impressive 73% lift from prior published figures, and (ii) eye-wateringly large, but (iii) remarkably only accounts for 34% of the rutile resource.

ESG credentials validated

The CO₂ advantage of rutile over ilmenite and African natural graphite over Chinese (and synthetic) has been covered well, with our note [here](#). The new study builds on this, noting most power will come from a grid-hydro and a solar farm. While solar is off-touted, only those projects with minimal cloud cover, including Kasiya, can achieve the ~10-12c/kWh (full capex and opex) seen in places such as West Africa. This isn’t just theoretical; we note a 60Mw solar plant was recently commissioned by JCM in Malawi. Better still, today’s study shows progressive backfilling. While this is positive for locals, it may be the tip of the iceberg with potential to return not just to subsistence farming, but for commercial opportunities for local stakeholders; studies are commencing now to establish the viability of such options.

Valuation: 0.5xNAV_{10%} A\$1,466m

We match the scoping study / pricing for an SCP asset-level NPV_{10%} of A\$1,621m, similar to the published A\$1,623m. This is a **4% beat on our estimates**, based on the higher grade, but also on scheduling against prior flat-forward estimates. This sees rutile drop from ~1.27% drops to 1.07% in later years, validated by the geology with at-surface enrichment via weathering. This is offset by graphite actually rising from 1.3% in-situ toward 1.7% in later years as near-surface depletes by ‘wiggling’ to atmosphere. Graphite grade is well over our forecast, but the implied 76% saleability (discarding ~24% low-value fines, ironically the bread and butter of currently loss-making African peers) leave saleable graphite grades in line with the prior scoping study / our forecast. On capex, we previously modelled up front A\$775m which now drops to A\$510m, but lifts to A\$996m including stage two, although that should be self-funding so is less relevant to the number one price-driver: share count. The only other modifier we make is to deduct a 10% minority that will apply to the government once in production, for net A\$1,466m asset NPV, and A\$1.5bn NAV.

Table 2. SOTP valuation for Sovereign

Commodity price	CY21E	CY22E	CY23E	CY24E	CY25E	Group NAV sensitised to rutile and graphite price (A\$m, ungeared)*					
Rutile price (US\$/t)	1,470	1,469	1,456	1,458	1,466	Project NPV 10% (A\$m)					
Graphite price (US\$/t)	1,085	1,085	1,085	1,085	1,085	R \$0.91k	R \$1.11k	R \$1.31k	R \$1.51k	R \$1.91k	
SOTP project valuation*						Graphite \$0.835k/t	1,316	1,316	1,316	1,316	1,316
						Graphite \$1.085k/t	1,539	1,539	1,539	1,539	1,539
						Graphite \$1.335k/t	1,762	1,762	1,762	1,762	1,762
						Ungeared project IRR^:	29%	29%	29%	29%	29%
						Project NPV 8% (A\$m)					
						R \$0.91k	R \$1.11k	R \$1.31k	R \$1.51k	R \$1.91k	
						Graphite \$0.835k/t	1,572	1,572	1,572	1,572	1,572
						Graphite \$1.085k/t	1,836	1,836	1,836	1,836	1,836
						Graphite \$1.335k/t	2,101	2,101	2,101	2,101	2,101
*Shares diluted for options mine build, ungeared						*Project NPV, ex fin. costs and cent G&A, discounted to build start; ^SVM px deck					
Market P/NAV _{5%}						0.15x					

Recommendation: maintain BUY rating and A\$1.65/sh PT

Rather than nit-pick around commodity price and unit cost assumptions, we base our valuation on this model, and more simply apply a 50% discount to our NAV to account for uncertainty in estimates at this stage. As such, **we maintain our BUY rating and A\$1.65/sh PT**, estimating that the stock trades at a current 0.15xNAV diluted for options, but not mine-build. We would encourage readers not to interpret this as the expanded scoping study having no value. Rather, the far and away biggest value driver is the de-risking of what were previously ‘best guess’ figures from SCP against now independently validated numbers. Although equity funding / dilution on a fully-built basis very difficult to guesstimate now, for reference we show a fully-funded fully-diluted (FF FD) valuation of >A\$3/sh at first production, putting the stock on a FF FD 0.15xNAV at first production, in line with the above build-start undiluted value.

Table 3. SCP fully-funded fully-diluted 1xNAV over time and sensitivities

Group NAV over time^	3Q22	3Q23	3Q24	3Q25	3Q26	Geared NAV at 1st production, diluted for build, net G&A and fin. costs^				
Kasiya NPV (A\$m)	1,294	1,428	1,693	2,212	2,471	NPV 10% (A\$m)				
G&A and fin. costs (A\$m)	(86)	(79)	(85)	(85)	(60)	R \$0.91k	R \$1.11k	R \$1.31k	R \$1.51k	R \$1.91k
Net cash prior qtr (A\$m)	18.7	4.8	142.4	(174.2)	(248.0)	Graphite \$0.835k/t	1,929	1,929	1,929	1,929
Cash from options (A\$m)	1.7	1.7	1.7	1.7	1.7	Graphite \$1.085k/t	2,217	2,217	2,217	2,217
Res outside inventory @ 0.15x	52	52	52	52	52	Graphite \$1.335k/t	2,505	2,505	2,505	2,505
NAV FF FD (A\$m)	1,280	1,407	1,804	2,007	2,217	Geared project IRR:	28%	28%	28%	28%
FD shares in issue (m)	526	526	675	675	675	NPV 8% (A\$m)				
1xNAV5%/sh FF FD (A\$/sh)	2.43	2.67	2.67	2.97	3.29	R \$0.91k	R \$1.11k	R \$1.31k	R \$1.51k	R \$1.91k
						Graphite \$0.835k/t	2,934	2,934	2,934	2,934
						Graphite \$1.085k/t	3,358	3,358	3,358	3,358
						Graphite \$1.335k/t	3,783	3,783	3,783	3,783

Source: SCP

^Project NPV net G&A & fin. cost; +n et cash; *diluted for build equity

The biggest upside in our view is the same as the biggest ‘risk’, M&A. A major like Rio Tinto currently makes SVM’s market cap in FCF every 2.6 days on a 2H21 run rate. This could provide a possible 75-year supply of both graphite and low-CO₂ TiO₂ feedstock. And this in a market where Rio have been penalised for poor ESG, lost their Serbian lithium asset and paid up for a high-Mg lithium brine, while South African operations (coal-grid powered, coal reduced process) saw their GM murdered last year in a deterioration of relations. With best-in-class margins, long life and through-cycle FCF, this is a type of asset majors covet.

Site visit: a gift to investors, ESG and Malawi

Last month we visited Malingunde in Malawi. With the project economics outstanding 'on paper', our trip focused on quantifying risks. We saw (a) low country risk outside minor timing risk, (b) low exploration risk with fast / cheap drilling, (c) no high-risk mining/processing items, a big win, (d) remarkable infrastructure with rail/power on site just 30 min drive from capital; (e) moderate social risk from the large footprint offset by ability to relocate back to improved (to commercial) farms, (f) low staff risk given SVM's process engineer from Base/ Iluka/ TZMI plus strong South African consultants.

Our review points to world-beating project on both economic and social metrics

On site, we saw ~40 staff managing the current drilling, where a low-cost and fast (three holes a day- per crew) hand auger programme is underway with 3-6 crews. Samples are split with graphite sent offshore for assay, and rutile is recovered in a new high-quality lab / warehouse facility with four-day turnaround in-house using a PXRF on recovered rutile (confirming grade reported is recovered grade). This allows rapid dynamic drilling, with concentrate to Australia for final external XRF.

Country risk - low: with legacy uranium mining, Malawi appeared pro-mining, with no security issues witnessed (little to no armed police / army seen); a simple low-GDP country. In fact, we understand even politicians born in a village on the deposit are extremely supportive. The granting of permits is done by committee arms-length from the mines minister to avoid corruption, which will likely slow the process when compared to more direct-drive countries. Overall, we see the risk to permit not granted as very low, with some chance of admin delays given the requirement to go through the committee, but still unlikely to see permitting hit critical path ever – the African advantage.

Figure 1. Typical physiography (not SVM) with 'cut away' valleys / villages, and unpopulated plateaus



Source: SCP

Exploration / geology risk – low to zero: hand auger is remarkable – having tried several powered methods with limited success, a local crew of four can dig three holes a day for ~US\$20/hole. Samples are split on site with half sent offshore for graphite assays. The rutile sample is dried, sized, de-slimed, gravity concentrated followed by magnetic separation to remove ilmenite / magnetic fractions, with rutile analysed by PXRF on site with four-day turn around from hole to result. Small 10-20g rutile concentrate samples are then sent to Perth for independent assay. QA/QC is very good, duplicates and blanks and even de-sliming is QA'd daily. End to end, this process is the fastest, cheapest, most accurate we've seen on any mining asset globally, a key win. Looking forward, infill for the BFS reserve is as low cost and fast as original drilling was to establish the current resource.

Figure 2. Hand auger drilling near power line on SVM property



Source: SCP

Mining / processing risk – low but complicated: the deposit is a new style, being a weathered metamorphic rock rather than modern beach sand. Imitation is the sincerest form of flattery, with peer producers in Africa now exploring for this style. However, with innovation comes risk. The key delta to a ‘washed’ beach sand is high slimes (clay from weathering doesn’t wash away), while large-footprint large-capex is no different here to peer projects. We QA capex below; yes there is a large infrastructure layout, but capex sense checks very well given no requirement for new roads or ports that peers need. Moving to slimes, this was a revelation for us. Peer Kenmare recently reported ‘increased slimes level negatively impacted on feed rates and recoveries...extensive mitigation measures are being implemented...to reduce slimes recirculation and improve...recoveries’. At ~45%, Sovereign’s slimes are much higher; on face value, this is a hurdle. However, the issue with slimes is dredge mining (SVM will be hydro mining), where slimes don’t all report to the slurry-pump, and thus recirculate and build up over time in the pond, slowing dredging and more importantly, impacting recovery. Even low slimes such as 10-15%, with precedents at Iluka Eneaba operations in Australia, can build up over time to disruptive levels enough to reduce recoveries/ production. SVM’s hydro-mining and/or dozer trap hybrid, in fact needs at least 20% slimes for a high-SG slurry to ‘hold’ the sand at efficient 2-3m / second flow rates (needs to be higher if lower slimes). Given SVM is hydro-mining, all water/slurry/slimes are sent to the process plant so don’t build up at the mining face. The “top-down” hydro mining approach also has the advantage of giving more constant / reliable plant feed and ensures optimum plant performance. The point is, yes slimes are a major issue for mineral sands, but only for dredge miners. Sovereign will have to deal with the slimes at the plant, detailed below, but the companies lead process engineer is well versed in doing just that, and was integral to last week’s flow sheet.

Mining: hydro mining is being developed in tandem with global contractor Fraser Alexanders (principal commissioned >200 in his career), an SA-based team accomplished at tailings hydro-mining of South African gold dumps, but with global roll out. The ‘ah hah’ here is a 45 degrees down-ward angled hydro-gun / face geometry, so-called “top-down” approach. This is different to bottom-up vertical face hydro mining used in Base’s operation, where slumps risk injury, and create heterogenous feed. In Sierra Leone and at RBM the slumps can break-off a bucket on the bucket wheel dredge. At SVM, the ore is a saprolite not an unconsolidated sand, potentially creating a ‘hard rock risk’. However, when the saprolite gets wet

it almost immediately ‘slumps / breaks down’ into sand. We visited a 5m ‘borrow pit’ (dug by road builders) and saw this, but more importantly the feedback from Fraser Alexander was that the above ‘water slump’ effect is excellent, as evidenced by ‘gullying’ (rainwater carved channels in the pit) demonstrating the soft ore. The water table perches above the hard-rock at ~7-12m. Recall 0-4m has high rutile / low graphite, 4-8m has high graphite medium rutile, 8-12m has high graphite / low rutile, >12m fresher ore for low rutile. At a minimum we would expect 0-8m mining, and potentially 8-12m, with a trade off on 12-16m. Once at 8m the mining area will require dewatering, an addressable technical aspect.

Figure 3. Historic borrow-pit showing gullying in the soft saprolite in response to rainfall



Source: SCP

Processing: with >3mm oversize screened out at the mining face, slimes will be removed by cyclone, and sent to a TMF with flocculant. The kaolinite clay has excellent settling properties, but will be blended with tails ‘sand’ for material handling (~40% solids), a key solution. Rutile is removed by spirals in a heavy-mineral concentrate (HMC), graphite is floated from the light tail, and final sand tail is mixed with slimes into a TMF, with TMF water recovered to the process pond. The TMF can be constructed with tailings ‘sand’ given the flat land and low TMF height. Only ~20Mt / 2 years of TMF is required up front + a minor addition each year given most tails will be used to backfill the mining area pre-remediation, less a swell factor. The TMF will also be remediated and return to the local community with the clay/sand mix providing ideal growing conditions / water retention.

Power: the hydro-power grid is useful, but unreliable at times. SVM can secure power at ~11.7c/kwh using solar on a BOOT / arms length basis, with batteries for partial overnight support, and diesel backup (~5Mw). This isn’t common worldwide as you need sunlight and space; it is common in Africa (Kinross, B2 etc). In fact, a recent 60Mw solar farm build in Malawi talks to the solar-suitability of the country.

Figure 4. A 60Mw solar farm commissioned recently in Malawi



Source: SVM / JCM

Infrastructure / logistics risk - low: the rail from Nacala port to Nkaya (in Malawi, south of capital Lilongwe) is full rehabilitated narrow-gauge high-volume rail. From Nkaya to Lilongwe can take reduced-load cargo on 15t axel limit until bridges improved. The final ~50km from Lilongwe to site is laid with concrete foundation but unused (Figure 5), so will need minor re-ballast, but tracks and sleepers are in good condition. The final 10km to the process plant will need new rail, budgeted in the FS; a traditional ~US\$1m/km puts this at SCPe ~US\$10m only (within US\$98m infrastructure capex in expanded scoping study). This means day one SVM can truck 10km to rail, use slow-train on existing rail to Nkaya, and double up loads to port from there, for little to no cost (only ~200kt pa, one train a day). As capacity picks up, a rail spur / rehab to Lilongwe and remediated bridge to Nkaya means for very little money SVM then have full working railway from port to site. This is without peer in East-Africa as all precedent and proposed operations needs to build rail or road at a minimum, up to a full port as well.

Figure 5. The least-used spur of rail from Lilongwe to site remains in good condition



Source: SCP

Social / RAP risk - moderate: Physiographically the licence is 80% ‘low plateaus’ hosting highest grade ore, casava and maize and no villages. Around 20% of the footprint is cut-away valleys (‘Dambos’, the green areas on satellite images), with black soil, small streams in the wet season, at-surface water table with excised laterite cap / lower grades. Firstly, Dambos are excluded from mining, meaning most of the population on the licence will not be impacted. Coming back to the plateaus, we saw sparsely populated farms and the odd mud hut. To quantify this, the 19.1m population of Malawi drops to 17m excluding the top 30 cities, spread over ~118,250km² for ~140/km². Assuming a 90/10 split into dambos could see a RAP requirement of as low as 50 people/km², although those figures haven’t been quantified in the mine area. Simplistically, an 8-16m pit with conservative 30%-again buffer could required 1.8-3.5km² pa. Once relocated pits be backfilled with benign tails, with the sand-clay mix ideal for agriculture, likely with at-surface soil improvement.

There is a twist which dramatically improves the relocation outcome; while Stage 1 mining will need to relocate people, once remediated, the land could be suitable for more intense agriculture (macadamias, avocado etc), giving the opportunity to lift from subsistence to commercial farming. Better still, cash crops’ higher population mean Stage 2 relocation could be back to remediated Stage 1 areas meaning there may be no further requirement to relocate out of the mining area, a true game changing win. A final mitigating factor here is that there are no indigenous populations on the mining area (heritage/original tribes). Although consultant are being employed to assist here, from the owners side, the SVM Board has credentialed mining ESG people – Nigel Jones – ex Rio Tinto Simandou PM and Ben Stoikovich, and Environmental / Mining Engineer.

Figure 6. Unpopulated plateau (near) and villages in not-to-be-mined valleys (far)



Source: SCP

Staff / HR risk - low: We spent time on site with the lead process engineer. With experience on the Base Resources design-team as lead engineer at Ausenco on the DFS, and also on site as an employee post commissioning as head of process engineering, there is great overlap. Adding strong commercials after time with industry consultants TZMI, roles at Iluka as a commissioning metallurgist and RGC Eneabba mineral sands in Australia have clear relevance. Informal feedback from a large group of PFS consultants on site a week before us was simple enthusiasm to ‘be involved’ on what was noted as a blue-ribbon project. At an exploration level, there is a solid in-country skill base, exemplified by the first-class processing facility (Figure 6). However, despite a strong consultant base, the company will need to recruit engineering staff for the PFS and onward. We note several projects in Africa are winding up currently, meaning there is good potential for SVM to pick up where peers are leaving. Critically, South Africa doesn’t have the same shortage of people that Canada / USA / Australia are facing, a key point in the current environment.

Figure 7. (A) SVM Lilonge processing lab showing (B) riffle table, (C) mag sep and (D) PXRF



Source: SCP

Capex advantage vs. peers: Separately to the site visit, the scoping study shows US\$372m (including US\$58m contingency) for 12Mtpa Stage 1 hydro-mining operation with spirals, no new rail, no new road, and no new port. As the highest value deposit globally, the relative capital intensity / tonne of production (or capex / annual revenue given a basket of minerals) will always be the lowest globally. Because most

peers need(ed) new ports, SVM will always have doubly lower unit capex than any peer globally. Furthermore, SVM has potential to also access a second export route – the Beira-Sena port/ rail complex. Some sense checks: **Base / Toliara capex** ([here](#)) is US\$520m for 13Mtpa (higher capital intensity as more remote on Madagascar). Specifically, this includes a 45km sealed road and substantial 630m concrete bridge, a 23Mw HFO power (off grid), and 550m jetty (and port storage) for US\$168m, i.e. on like for like this would be US\$352m for SVM (who has existing rail and port). Toliara capex for just mining + plant is US\$170m (US\$149m + escalation). **Base / Kwale capex** (2014 annual report, [here](#)) was US\$310m, for 11Mtpa (140Mt/13yrs). This included a new port, which would argue SVM in low 300s (lower on no port, higher on inflation). **Sovereign existing rail-port** at Nacala ([here](#)) is an embayment meaning no river silt, with an existing new container port and two backups north to Pemba (break bulk and container) and south to Beira (container). Against Base / Toliara ([here](#)) which has proposed an onshore tidal area for shallow draft (proposed jetty on the yellow sandbank). **Strandline capex** in Australia has 8Mtpa ([here](#)) for A\$338m ([here](#)), or US\$256m which would pro-rate to high 300s if compared to SVM, another good data point.

Why we like Sovereign Metals

- Existing **1,775Mt @ 1.01% rutile** comes from just 180km² of Kasiya
- A\$1.5bn NPV8 project on capex of just US\$372m for attractive economics
- Pure rutile + graphite credits lowers CO₂ and adds EV credits addressing ESG agenda
- On hydropower, hydro-mineable, on modern rail to deep-water port with allocation
- PFS-level Malingunde graphite project adds diversification and second pillar to value

Catalysts

1. **2H22:** Further offtake agreements
2. **2023:** PFS
3. **2024:** DFS

Research

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Ticker: SVM LN	Price / mkt cap: A\$0.485/sh, A\$225m	Project PNAV today: 0.15x	Asset: Kasia / Nsaru
Author: B Salier E Magdzins	Rec / O.5xNAV PT: BUY, A\$1.65/sh	1xNAV_{3Q24} FF FD: C\$2.97/sh	Country: Malawi

Commodity price	CY21E	CY22E	CY23E	CY24E	CY25E
Rutile price (US\$/t)	1,470	1,469	1,456	1,458	1,466
Graphite price (US\$/t)	1,085	1,085	1,085	1,085	1,085

SOTP project valuation*				
	A\$m	O/ship	NAVx	A\$/sh
Ungeared @ build start (4Q23)	1,466	100%	0.50x	1.51
Cash SCPe 2Q22	18.7	100%	1.00x	0.04
Cash from options	1.7	100%	1.00x	0.00
Res outside inventory @ 0.15% insitu	52	100%	1.00x	0.11
Asset NAV 10% US\$1308/t rutile	1,539		PT:	1.66

*Shares diluted for options mine build, ungeared Market P/NAV_{5%} 0.15x

Group NAV sensitised to rutile and graphite price (A\$m, ungeared)*					
Project NPV 10% (A\$m)	R \$0.91k	R \$1.11k	R \$1.31k	R \$1.51k	R \$1.91k
Graphite \$0.835k/t	1,316	1,316	1,316	1,316	1,316
Graphite \$1.085k/t	1,539	1,539	1,539	1,539	1,539
Graphite \$1.335k/t	1,762	1,762	1,762	1,762	1,762
Ungeared project IRR^	29%	29%	29%	29%	29%

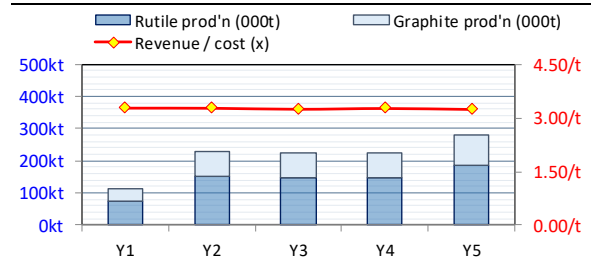
*Project NPV, ex fin. costs and cent G&A, discounted to build start; ^SVM px deck

Group NAV over time^	3Q22	3Q23	3Q24	3Q25	3Q26
Kasiya NPV (A\$m)	1,294	1,428	1,693	2,212	2,471
G&A and fin. costs (A\$m)	(86)	(79)	(85)	(85)	(60)
Net cash prior qtr (A\$m)	18.7	4.8	142.4	(174.2)	(248.0)
Cash from options (A\$m)	1.7	1.7	1.7	1.7	1.7
Res outside inventory @ 0.1	52	52	52	52	52
NAV FF FD (A\$m)	1,280	1,407	1,804	2,007	2,217
FD shares in issue (m)	526	526	675	675	675
1xNAV5%/sh FF FD (A\$/sh)	2.43	2.67	2.67	2.97	3.29

Geared NAV at 1st production, diluted for build, net G&A and fin. costs^					
NPV 10% (A\$m)	R \$0.91k	R \$1.11k	R \$1.31k	R \$1.51k	R \$1.91k
Graphite \$0.835k/t	1,929	1,929	1,929	1,929	1,929
Graphite \$1.085k/t	2,217	2,217	2,217	2,217	2,217
Graphite \$1.335k/t	2,505	2,505	2,505	2,505	2,505
Geared project IRR:	28%	28%	28%	28%	28%

^Project NPV net G&A & fin. cost, +n et cash; *diluted for build equity

Prod'n (Y1 from 4Q25)	Y1	Y2	Y3	Y4	Y5
Rutile prod'n (000t)	75	153	149	149	186
Graphite prod'n (000t)	37	76	74	74	94
Revenue / cost (x)	3.29	3.28	3.26	3.28	3.26



Source: SCP estimates

Resource / Reserve	Tonnes	Rutile	Tonnes	Graphite	Tonnes
Resource	1775Mt	1.01%	17.9Mt	1.32%	23.4Mt
SCP mining inventory	541Mt	1.14%	6.2Mt	1.52%	8.2Mt

Project: USES		Funding: SOURCES	
Pre-build exploration:	A\$18m	Cash + ITM options:	A\$20m
Build capex:	A\$510m	DFS equity, spot:	A\$19m
Finance costs (A\$m)	A\$10m	Build equity @ 0.5xNAV:	A\$235m
TOTAL USES:	A\$539m	65% geared debt @ 10%:	A\$306m
Buffer / drill budget:	A\$42m	TOTAL SOURCES:	A\$580m

Share data	Basic	>FD	>DFS eq	>Build equity
Basic shares (m)	463.28	486.6	526.4	674.8

Ratio analysis (YT June)	FY21A	FY22E	FY23E	FY24E	FY25E
Shares out (m)	413.4	463.3	463.3	651.5	651.5
EPS (A\$/sh)	-	-	-	-	-
CFPS (A\$/sh)	-	-	-	-	-
EV (A\$m)	-	206.0	219.9	229.0	601.2
FCF yield (%)	-	-	-	-	-
PER (x)	-	-	-	-	-
EV/EBITDA (x)	-	-	-	-	-

Income statement (YT June)	FY21A	FY22E	FY23E	FY24E	FY25E
Net revenue (A\$m)	-	-	-	-	-
COGS (A\$m)	-	3,171.4	-	-	-

Group profit (A\$m)	FY21A	FY22E	FY23E	FY24E	FY25E
G&A (A\$m)	1.4	2.2	1.9	1.9	1.9
Finance cost (A\$m)	-	-	-	-	10.3
Exploration (A\$m)	2.9	7.9	12.0	-	-
Taxes (A\$m)	-	-	-	-	-
Minorities (A\$m)	-	-	-	-	-
Other (A\$m)	0.9	1.1	-	-	10.3
Net income (A\$m)	(5.1)	(11.1)	(13.9)	(1.9)	(12.2)

Cash flow, attrib. (YT June)	FY21A	FY22E	FY23E	FY24E	FY25E
EBIT (A\$m)	(5.1)	(11.1)	(13.9)	(1.9)	(1.9)
Add back D&A (A\$m)	0.0	-	-	-	-
Net change in wkg cap (A\$m)	(0.1)	-	-	-	-
Other non-cash (A\$m)	(1.2)	-	-	-	10.3
Cash flow ops (A\$m)	(3.9)	(11.1)	(13.9)	(1.9)	(12.2)
PP&E - build (A\$m)	(0.3)	(0.2)	-	(150.0)	(360.0)
PP&E - sust (A\$m)	-	-	-	-	-
Cash flow inv. (A\$m)	(0.3)	(0.2)	-	(150.0)	(360.0)
Share issue (A\$m)	9.8	22.0	-	234.6	-
Debt draw (repay) (A\$m)	-	-	-	-	306.0
Cash flow fin. (A\$m)	9.8	22.0	-	234.6	306.0
Net change in cash (A\$m)	5.6	10.7	(13.9)	82.7	(66.2)
EBITDA (A\$m)	(5.1)	(11.1)	(13.9)	(1.9)	(1.9)

Balance sheet	FY21A	FY22E	FY23E	FY24E	FY25E
Cash (A\$m)	8.0	18.7	4.8	87.0	20.7
Acc rec., inv, prepaid (A\$m)	0.1	0.1	0.1	0.1	74.2
PP&E & other (A\$m)	7.7	7.7	7.7	157.7	443.7
Total assets (A\$m)	15.8	26.6	12.6	244.8	538.6
Debt (A\$m)	-	-	-	-	306.0
Accounts payable (A\$m)	0.7	0.7	0.7	0.7	0.7
Others (A\$m)	0.1	0.1	0.1	0.1	0.1
Total liabilities (A\$m)	0.8	0.8	0.8	0.8	306.8
Issued capital (A\$m)	55.3	77.3	77.3	311.9	311.9
Retained earnings (A\$m)	(39.4)	(50.7)	(64.7)	(67.1)	226.7
Liabilities + equity (A\$m)	15.8	26.6	12.6	244.8	538.6

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Summary of Recommendations as of June 2022	
BUY:	50
HOLD:	0
SELL:	0
UNDER REVIEW:	0
TENDER:	0
NOT RATED:	0
TOTAL	50

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