

**Ticker:** SVM AU **Net cash:** A\$8.0m **Project:** Kasiya / Nsaru, Malingunde  
**Market cap:** A\$231m **Price:** A\$0.54/sh **Country:** Malawi  
**RECOMMENDATION:** BUY **TARGET (up):** A\$1.30/sh **RISK RATING:** SPECULATIVE

The rutile metallurgy is peer leading; although already known given prior work, Sovereign again has more disclosure than peers because unlike them, there is no grain size, U/Th, or Fe/Fe+Mg issues that management prefer investors not to look at too closely. However, the graphite metallurgy is a new step-change. With ~1% insitu, credits were promising but recovery and product-size was unclear given the unique genesis and flow sheet of floating a mineral sands tail. Now we not only have 60% recovery (above prior 50% guesstimate), to a product with 30% premium-priced jumbo and super-jumbo, lifting to 72% with medium- and large-flake, and just 11% 75-100um fines. The 'dirty little secret' of graphite is that whilst fines sales to EVs make up 90% of the promotion, Syrah sold their product for US\$490/t in 3Q21 against producing Canadian mines not selling to EVs with US\$1,500/t 'booked not benchmarked'. Value: ahead of the scoping study, a 8-10Mtpa operation at 1% TGC and 50% recovery could produce 40-50ktpa of graphite, a credit larger than many primary asset. Early-years 1.5% rutile grades already support >US\$20/t insitu, lifting to US\$23-25/t including graphite at US\$500-1,000/t, with the ability to 'qualify' progressively higher prices as rutile generates most FCF. Peers: the quality of the asset is clear when considering Kenmare's reserves would be valued at like-for-like US\$12-13/t, with ~70% of that high-CO<sub>2</sub> ilmenite (requiring coal furnace reduction to synthetic rutile) critical ahead of Sovereign's **LSE listing next week**. This leaves Sovereign as potentially the largest (SCPe >1Bt including Nsaru), highest value, lowest CO<sub>2</sub> deposit globally. Ahead of the upcoming PEA where we will look at a DCF valuation, **we maintain our BUY rating, lifting our PT from A\$1.20/sh to A\$1.30/sh** based on 5% in-situ valuation (i.e. US\$65/t rutile valuation @ US\$1,300/t) over the JORC 644Mt @ 0.96%, now adding graphite on the same metrics but 50%-riskd. This is a catalyst heavy name with (a) LSE/AIM listing on December 14, (b) Kasiya MRE, now including graphite and (c) scoping study all in coming weeks, followed by (d) potential doubling of the MRE as Nsaru is added, and (e) an updated CY22 scoping study to capture this.

**Table 1 (A) Graphite size distribution and (B) concentrate**



Table 1: Kasiya 2021 Graphite Results						
Constituent	Malawi Rutile (Sovereign)	Malawi Rutile (Sovereign)	Sierra Rutile (Iluka)	RBM (Rio Tinto)	Kwale (Base Resources)	Namakwa Sands (Tronox)
Recovery	100%	94%				
TiO <sub>2</sub> %	95.0	97.2	96.3	93.3	96.2	94.5
ZrO <sub>2</sub> +HfO <sub>2</sub> %	0.20	0.21	0.78	1.30	0.72	1.10
SiO <sub>2</sub> %	0.67	0.61	0.62	2.00	0.94	2.00
Fe <sub>2</sub> O <sub>3</sub> %	0.99	0.42	0.38	0.70	1.25	0.8
Al <sub>2</sub> O <sub>3</sub> %	0.45	0.38	0.31	0.90	0.23	0.6
Cr <sub>2</sub> O <sub>3</sub> %	0.13	0.13	0.19	0.11	0.17	0.14
V <sub>2</sub> O <sub>5</sub> %	0.67	0.70	0.58	0.40	0.52	0.33
Nb <sub>2</sub> O <sub>5</sub> %	0.37	0.39	0.15	0.30	-	0.04
P <sub>2</sub> O <sub>5</sub> %	0.01	0.001	0.01	0.03	0.00	0.02
MnO %	0.02	0.01	0.01	-	0.03	0.4
MgO %	0.003	0.01	0.01	-	0.10	0.01
CaO %	0.003	0.001	0.01	-	0.04	0.04
S %	0.01	0.01	<0.01	<0.05	-	0.01
U+Th ppm	31	23	26	100	53	-
d50 sizing µm	Pending	118	-	124	-	124
<75µm %	Pending	8.3	-	-	-	-

Source: Sovereign Metals

## Largest highest-grade undeveloped mineral sands asset adds graphite for leading ESG credentials

Bulk metallurgical samples from a 1.6t 1.19% rutile composite-sample at Kasiya have returned 95-97.5% TiO<sub>2</sub> grades in a rutile concentrate with associated 94-100% recovery. The concentrate contained low deleterious, with Fe/Fe+Mg, U/Th and grain size, plus other deleterious, all well within specification. The company has now garnered significant interest from Tier 1 rutile off-takers for this product. Graphite metallurgy was also undertaken for the first time on the ~1% in-situ resource, showing >60% recovery of >150um graphite recovered from rutile tails. Given the pre-washed feed, size distribution shows ~30% jumbo and super jumbo >300um, 40% medium to large flake >150um, and just 22% small for EV supplies.

### Why we like Sovereign Metals

1. Existing 644Mt @ 1.01% comes from just 49km<sup>2</sup> of Kasiya
2. Kasiya drilling over 89km<sup>2</sup> plus 40km<sup>2</sup> at Nsaru points to ~1.7Bt global potential
3. Pure rutile + graphite credits lowers CO<sub>2</sub> and adds EV credits addressing ESG agenda
4. Unique metallogenesis drives large grain size and premium low-deleterious product
5. On hydropower, hydro mineable, on modern rail to deep-water port with allocation
6. PFS-level Malingunde graphite project adds diversification and second pillar to value

### Catalysts

1. **4Q21:** Kasiya MRE update to add graphite and increase M&I
2. **4Q21:** Kasiya Scoping Study, including graphite
3. **4Q21:** UK listing on LSE AIM market
4. **1H22:** Nsaru definition and extension drilling
5. **Mid 2022:** Updated / expanded PEA to including Nsaru

### Research

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SCP Valuation			
Kasiya in-situ value @ 644Mt (US\$bn)	8,830	Basic shares on issue (m)	<b>423</b>
Kasia @ 5% insitu value (US\$m)	441	Dilutive options and RSUs (m)	37.8
Kasiya asset valuation (A\$m)	597	Fully diluted shares (m)	461
Plus cash on hand (A\$m)	8.0	SCP NAV/sh (A\$/sh)	1.32
Plus cash from dilutive options (A\$m)	6.4	Recommendation	BUY
<b>Sovereign group NAV (A\$m)</b>	<b>611</b>	<b>Price target (A\$/sh):</b>	<b>1.30</b>

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BUY:	48
HOLD:	0
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UNDER REVIEW:	0
TENDER:	1
NOT RATED:	0
TOTAL	49

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