

February 7, 2023

ADD (initiation)

Stock code:	SRX AU
Price:	A\$0.20
12-month target price:	A\$0.45
Previous target price:	A\$
Up/downside to target price:	125.0%
Dividend yield:	0.0%
12-month TSR*:	125.0%
Market cap:	A\$84.85m
Average daily turnover:	A\$0.64m
Index inclusion:	ALL ORDINARIES

* Total stock return – Up/downside to target price + 12-month forward dividend yield.

Price performance

(%)	1M	3M	12M	3Y
Absolute	-13.1	-4.8		
Rel ASX/S&P200	-19.1	-13.5		



Source: Bloomberg

Financial summary

	Dec-21A	Dec-22F	Dec-23F	Dec-24F
Revenue (US\$m)	184.2	241.0	253.6	247.8
EBITDA Norm (US\$m)	20.50	69.71	69.32	63.51
Net Profit (US\$m)	6.10	61.28	54.34	44.56
EPS Norm (US\$)		0.14	0.13	0.11
EPS Growth Norm (%)			-11.3%	-18.0%
P/E Norm (x)		0.96	1.08	1.32
DPS (US\$)	0.000	0.000	0.000	0.000
Dividend Yield (%)	0%	0%	0%	0%
EV/EBITDA (x)	2.37	0.30	-0.18	0.62
Gearing (Net Debt/EBITDA)	-0.49	-0.54	-1.02	-0.31

Source: Company data, Morgans estimates

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Analyst(s) own shares in the following stocks mentioned in this report:

– Sierra Rutile Holdings

Sierra Rutile Holdings

World's largest rutile producer gaining momentum

- Sierra Rutile (SRX), based in Sierra Leone, is a long-established producer of high-quality natural rutile for pigment, metal, and welding markets.
- SRX has a cash generative Area 1 operation, with a favourable fiscal scheme (tax and royalty of 1%) and is well positioned to maximise value from Area 1's remaining operational life.
- SRX's development project, Sembehun, is a large resource base with attractive fundamentals located close to Area 1. A definitive feasibility study (DFS) is on track and due for completion by Q423.
- SRX's financial position is sound with US\$37.7m (unaudited) cash at 25 January 2023, with no debt and US\$44.3m balance in a rehabilitation trust.
- We initiate coverage with an ADD rating and A\$0.45 DCF-based target price. We see SRX as a prospective growth story with attractive upside potential.

Initiation

- We initiate coverage with an Add rating and A\$0.45 target price.

Analysis

- The big picture:** SRX is a material contributor, supplying ~20% to 25% of global natural rutile to the titanium pigment and metals markets. SRX mines high grade rutile, along with ilmenite and zircon in concentrate (ZIC) as by-products from its Area 1 operation in Sierra Leone.
- Rutile contains the highest proportion of TiO₂ compared to ilmenite, hence it commands a premium price (US\$1,500/tonne for rutile vs US\$300/tonne for ilmenite). Unlike other commodities, the mineral sands pricing market is opaque, and a potential contributor to SRX's share price trailing materially behind rutile prices. Natural rutile prices have increased by ~50% since Covid (2020) on the back of strong demand and are holding steady due to a supply deficit.
- Operational deep dive:** Area 1 is a cash generative operation, with no debt, mature infrastructure, and a port facility. It has a reserve life of 3 years, and ~2.5 years of mine life extension program, along with a favourable fiscal scheme (tax and royalty of 1%). Area 1 is nearing its mine life (between ~ 5 to 7 years as per Morgans estimates).
- The growth opportunity:** Sembehun has attractive fundamentals, is a quality asset with a large resource base (dominant percentage of rutile in assemblage, with >13 years mine life). It is located 30kms from the Area 1 operation and will leverage Area 1's infrastructure and port facilities. Ramp up of Sembehun and ramp down of Area 1 will happen simultaneously, although timings, opex implications, and capex profile will be clearer post the DFS. Iluka conducted the Sembehun PFS prior to de-merger with development capex of US\$337m and NPV of US\$318m. SRX expects to complete the DFS in Q423.

Investment view

- SRX looks compelling trading at an implied ~125% upside to our valuation/target price of \$A0.45ps.
- SRX is financially (provisions, cash balance) well set up via the Iluka demerger, along with a dedicated in-country management team, a favourable fiscal regime for the life of Area 1 operation, and a quality growth asset.
- Sembehun's PFS was encouraging, and SRX is in the process of de-risking Sembehun via DFS as it heads towards a final investment decision (FID). We are tracking capex variations (if any), capital structure, and execution plans. While the DFS is in progress, we have assumed funding options and pragmatically assigned a risk-adjusted valuation to Sembehun.

Price catalysts

- Sembehun FID (4Q23).
- Area 1 – Mine life extension (resource/reserve updates).

Risks

- Country risk in Sierra Leone, execution risk at Sembehun, financing risk on development, and pigment market risk.

Sierra Rutile Holdings

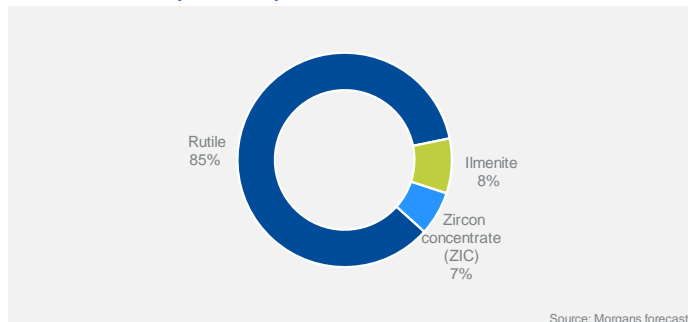
ADD

as at February 7, 2023

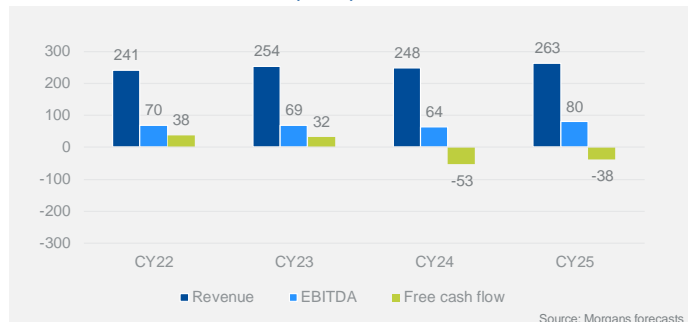
Price (A\$):	0.20	12-month target price (A\$):	0.45
Market cap (A\$m):	84.85	Up/downside to target price (%):	125.0
Free float (%):	100.0	Dividend yield (%):	0.0
Index inclusion:	ALL ORDINARIES	12-month TSR (%):	125.0

Sierra Rutile (SRX) is one of the significant natural rutile producers based in Sierra Leone. SRX owns and operates a multi-mine mineral sands operation at Area 1 and a development project, Sembehun, 30km from the Area 1 operation.

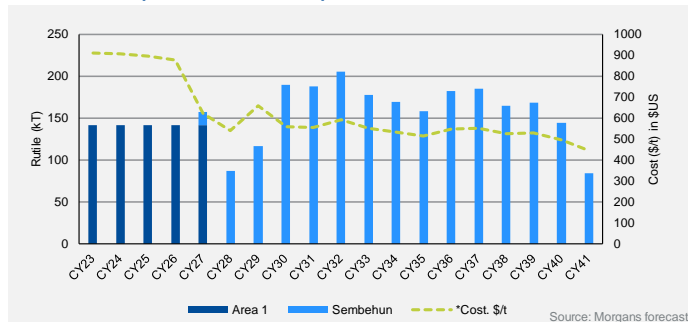
Forecast revenue by commodity - CY23



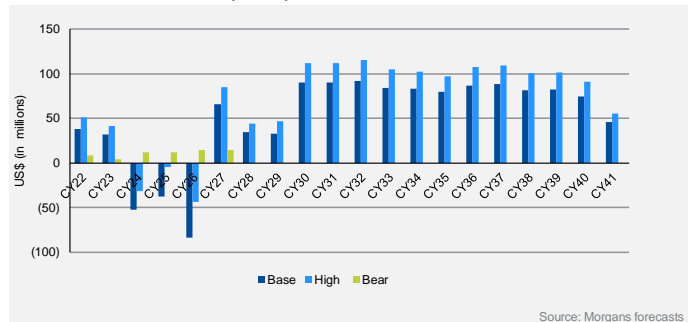
Forecast Revenue, EBITDA, FCF (US\$m)



Forecast rutile production and cost profile



Forecast free cash flows (US\$m)



Bull points



Strategic asset: SRX has world-scale, long life minerals asset. It is a long established producer of high-quality natural rutile for Ti markets. Substantial Sembehun resources support clear extension and expansion upside.

Constrained supply: Supplies 20% to 25% of global natural rutile to Ti pigment and metals market. It has long-standing customer relationships with strong demand for premium natural rutile in declining supply.

Robust financial position and attractive valuation: Cash of US\$37.7m at 25 January and no debt. Trading at a sharp discount, offers capital upside.

Funding growth: Opportunity to generate attractive returns for relatively low risk via development of Sembehun. Low expansion (brownfield) risk.

Bear points



Country risk: While currently stable, Sierra Leone remains a country with social, political, and economic challenges. ASX-listed mining companies tend to see a market discount applied to their African assets.

Funding: Sembehun DFS is in progress, capital structure and funding arrangement to support development of Sembehun is unclear (evolving).

Execution: Mine construction, and associated processing and infrastructure risks, along with engineering and technical uncertainties associated with product qualities, and mineral recoveries.

Pigment market risk: Demand softening influenced by macroeconomic conditions.

Figure 1: Financial summary

Year to 31 Dec (US\$m)					
Income statement	2021A	2022F	2023F	2024F	2025F
Revenue	184.2	241.0	253.6	247.8	262.7
Other Income	2.1	0.0	0.0	0.0	0.0
Total Operating Costs	-165.8	-170.0	-183.0	-183.0	-181.0
Other Costs	0.0	0.0	0.0	0.0	0.0
EBITDA	20.5	69.7	69.3	63.5	80.3
D&A	-32.1	-7.2	-13.7	-13.7	-11.4
EBIT	10.9	62.5	55.6	49.8	68.9
Net interest	-0.5	0.0	0.0	-4.0	-12.0
Pre-tax profit	10.9	62.5	55.6	49.8	68.9
Tax expense	-3.4	-1.2	-1.3	-1.3	-1.3
Underlying NPAT	6.1	61.3	54.3	44.6	55.6
Abnormals - post-tax	0.0	0.0	0.0	0.0	0.0
Reported NPAT	6.1	61.3	54.3	44.6	55.6
Cash flow statement	2021A	2022F	2023F	2024F	2025F
Cash receipts	20.5	219.6	253.6	247.8	262.7
Payments to suppliers	0.0	-170.0	-183.0	-183.0	-181.0
Net interest	-0.5	0.0	0.0	-4.0	-12.0
Income tax paid	-3.4	-1.2	-1.3	-1.3	-1.3
Operating cash flow	16.6	48.3	69.3	59.5	68.3
Purchase of PP&E	-16.0	-20.0	-36.0	-111.0	-105.0
Sale of PP&E	0.0	0.0	0.0	0.0	0.0
Other Investing Cash Flow (0.0	0.0	0.0	0.0	0.0
Investing cash flow	-16.0	-20.0	-36.0	-111.0	-105.0
Issue of share proceeds	0.0	0.0	0.0	0.0	0.0
Debt raised	0.0	0.0	0.0	25.0	50.0
Debt paid	0.0	0.0	0.0	0.0	0.0
Dividend paid	0.0	0.0	0.0	0.0	0.0
Financing Cash flow	0.0	0.0	0.0	25.0	50.0
Cash at beginning		9.4	37.7	71.0	44.5
Inc/(decr) cash at end	9.4	37.7	71.0	44.5	57.9
Balance sheet	2021A	2022F	2023A	2024A	2025A
Cash & deposits	9.4	37.7	71.0	44.5	57.9
Receivables	43.4	43.4	43.4	43.4	43.4
Inventories	40.5	40.5	40.5	40.5	40.5
Fixed assets	26.9	39.7	89.4	214.1	330.5
Total Assets	165.3	206.4	289.4	387.6	517.3
Payables	22.8	22.8	22.8	22.8	22.8
Interest bearing debt	0.0	0.0	0.0	25.0	50.0
Total Liabilities	84.8	124.5	124.5	149.5	174.5
Share capital	545.4	81.9	164.9	238.1	342.8
Other reserves					
Retained earnings	0.0	0.0	0.0	0.0	0.0
Minority interest	0.0	0.0	0.0	0.0	0.0
Total Equity	80.5	81.9	164.9	238.1	342.8
Valuation summary	Unrisked	Unrisked	Risked	Risked	
	A\$m	A\$ps	A\$m	A\$ps	
Area 1	240	0.40	240	0.40	
Sembahun (50% risked)	58	0.10	29	0.05	
Total operations	298	0.50	269	0.45	
Net Cash (/Debt)					
Total valuation	298	0.50	269	0.45	
WACC				14%	
Price target (A\$)				0.45	
AUD (DCF)				0.70	
Production & Costs	2022F	2023F	2024F	2025F	
Rutile - kt	136	142	142	142	
Ilmenite - kt	55	55	55	55	
Zircon in concentrate (ZIC) - kt	35	35	35	35	
Total Product sales - kt	226	232	232	232	
Rut. Cost : US\$/t net co-products	941.5	987.5	983.6	969.5	
Assumed Benchmark pricing	2022F	2023F	2024F	2025F	
Rutile - US\$/t FOB	1500	1520	1475	1580	
Ilmenite - US\$/t FOB	290	290	305	315	
Zircon in concentrate (ZIC) - US\$/t I	600	600	600	600	
AUD	0.77	0.77	0.74	0.73	
Per share data	2022F	2023F	2024F	2025F	
No. shares	424.2	424.2	424.2	424.2	
EPS (normalised, US\$ cps)	0.14	0.13	0.11	0.13	
DPS (cps)	0.0	0	0	0	
Dividend yield (%)	0	0	0	0	
Operating performance	2022F	2023F	2024F	2025F	
EBITDA margin (%)	28.9%	27.3%	25.6%	30.6%	
EBIT margin (%)	25.9%	21.9%	20.1%	26.2%	
EV/ EBITDA	0.8	2.1	2.3	1.9	
Revenue to cost	1.24	1.21	1.18	1.27	

Source: Morgans estimates. Note, 2022F numbers are forecast via CY22 quarterlies. SRX CY22 annual report due end of Feb 2023.

Four reasons Sierra Rutile looks prospective

We initiate coverage on SRX with an ADD rating and A\$0.45ps target price. We see four primary drivers for our investment thesis:

- **Exposure to high-value rutile market:** Long established, material producer of high-quality natural rutile within the titanium pigment, sponge/metal and welding markets.
- **Large scale:** Sembehun deposit, 30km from the existing Area 1 operation, is one the world's largest and highest-grade natural rutile deposits, with mine life of more than 13 years, low operating costs and low expansion (brownfield) risk.
- **Robust financial position:** With cash of US\$37.7m (A\$53.8m) at 25 January 2023, no debt, and US\$44.3m (A\$63.2m) balance in Sierra Rutile Rehabilitation Trust, the business is well setup to continue existing operations and deliver growth (via the Sembehun project).
- **Attractive pricing:** SRX is trading at a sharp discount to our risk adjusted conceptual DCF of A\$0.45ps, even assuming future funding. This flags the size of potential.

Company description

Sierra Rutile (SRX) is an established natural rutile producer based in Sierra Leone. It has been operating under the Sierra Rutile name since 2006 and was acquired by Iluka in 2016. The business listed last year (July-22) on the ASX, following its demerger from Iluka Resources. SRX owns and operates a multi-mine mineral sands operation at Area 1 and a development project, Sembehun, 30km from the Area 1 operation.

SRX's portfolio includes:

- Area 1, with an established operating history of more than 50 years; and
- Sembehun deposit (DFS in progress) – SRX's key focus.

Area 1 is a cash generative operation, with a current reserve life of 3 years, and ~2.5 years life of mine extension program at Pejebu and Ndendemoia.

Sembehun has a mine life of >13 years, low operating costs, and low expansion (brownfield) risk. The Sembehun DFS is expected to be completed by the end of CY2023.

With ~ 2,200 direct employees and ~800 contractors, SRX plays a critical role as one of the largest private sector employers in Sierra Leone.

SRX's demerger from Iluka - quick context

Iluka acquired SRX for US\$330m in 2016 with the strategic rationale of adding diversity to its cashflow through the acquisition of the world's largest rutile mine. Unfortunately, Iluka faced continuous unforeseen operational, labour, and mechanical challenges on the back of declining rutile prices. These challenges were particularly prevalent during Covid.

As Iluka completed a strategic review, the Board spun off SRX as an independent company, which commenced trading on the ASX in July 2022.

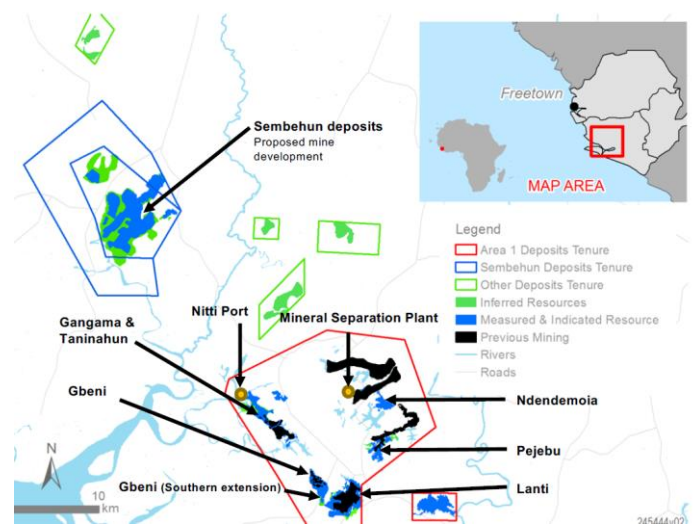
We believe SRX's operational performance will materially benefit from a dedicated in-country management team with 100% focus on the Sierra Leone operations (under Iluka it was the only African mine in a large Australian asset portfolio).

Figure 2: Map of Sierra Leone



Source: Iluka demerger booklet

Figure 3: Area 1 operation and Sembehun deposit overview



Source: Iluka demerger booklet

Investment and valuation

We initiate coverage on SRX with an ADD rating and A\$0.45ps target price, which we base on our risk adjusted DCF valuation.

SRX presents an opportunity for growth-seeking, risk-tolerant investors to get exposure to the supply-constrained, high-value rutile market. We see upside potential in SRX due to its dominant position, cash generative operation, and sound balance sheet to partially fund its growth (Sembehun) project.

Key risks

As a mining company based in Sierra Leone, SRX faces risks typical of African operations. In particular:

- **Sovereign risk:** SRX is one of the largest businesses in Sierra Leone. While currently stable, it remains a country with social, political, and economic challenges.
- **Funding risk to support Sembehun development:** While Area 1 is cash generative with no debt, long-standing infrastructure, and prudent management, the Sembehun DFS is in progress, and the capital structure and funding arrangements to support development of Sembehun is unclear (evolving).
- **Execution risk at Sembehun:** 1) mine construction, and associated processing and infrastructure risks; 2) engineering and technical uncertainties associated with product qualities, and mineral recoveries.
- **Pigment market risk:** Like all commodities, demand is influenced by macroeconomic conditions and global events. Prolonged declines in commodity prices may cause the suspension of mining operations resulting in a complete cessation of cashflow.

Valuation and assumptions

- Our modelled forecasts are based on base, high and bear case rutile price scenarios. Our \$0.45ps target price is as per our DCF based valuation, which applies a base-case rutile pricing scenario for the Area 1 operation and Sembehun deposit.

Figure 4: Valuation breakdown

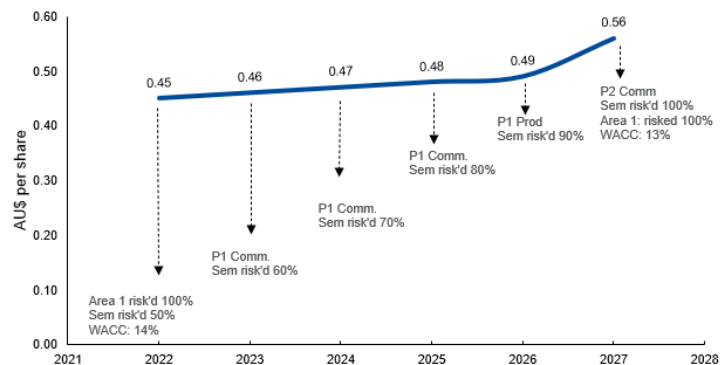
Asset	US\$m	A\$m	A\$ps	Riskd (%)	A\$ps	Notes
<i>(base case)</i>						
Area 1	168.01	240.01	0.40	100%	0.40	5 yrs mine life, with exploration upside
Sembehun	40.61	58.01	0.10	50%	0.05	>13 yrs mine life, tier 1 rutile deposit
Total Projects	208.62	298.02	0.50		0.45	
Other:						
Net Cash (/Debt)	0.0	0.0	0.0	0.00	0.00	
Total Other	0.0	0.0	0.0	0.00	0.00	
Total Valuation	208.62	298.02	0.50		0.45	
WACC				14%		
Target Price				0.45		

Source: Morgans estimates

Low tax and royalties (1%) rate for life of Area 1 adds to the bottom line.

- We value SRX's Area 1 operations and Sembehun project using a conceptual DCF model.
- Our DCF methodology assumes a risk-free rate of 3.6%, a market risk-premium of 6.0% and an equity beta of 1.5 to generate a WACC of ~14.0%.
- The higher WACC vs Iluka's estimates for Sembehun (14.0% vs 8.0%) reflects: 1) sovereign risk associated with African operations; 2) single asset play vs diversified portfolio with Iluka; 3) higher barriers to entry for juniors (e.g., cost of debt/bonding); 4) execution risk (volumes, opex, timing), and 5) dependence on third-party logistics/contractors/skills.
- We assume Sembehun will be fully funded via operational cashflows, debt and equity mix. We apply a risk weighting of 50% to the Sembehun DCF, while we assume a lower development capex for Sembehun (US\$337m, Iluka PFS estimate vs US\$300m Morgans estimate). The lower capex assumption stems from SRX's agile and simple structure/standards (vs Iluka).
- We have included royalties and taxes (1% for Area 1 and 7.5% for Sembehun) within our risk adjusted DCF model. Taxes are applied to turnover (revenues) as per Sierra Leone's fiscal regulation.
- Area 1 Rehabilitation trust/liabilities:** We assume US\$44.3m set up by Iluka in a trust fund will suffice to deal with Area 1 mine closure requirements. As such, we anticipate Area 1 (where the Mineral Separation Plant (MSP) is located) will not go into complete closure until Sembehun's life of mine (i.e., >13 years). No additional capex is accounted in the DCF for rehab obligations.
- Our forecasts (on base case price) show a step-up in revenue and EBITDA and a reduction in operating cost profile post Sembehun's commencement in line with operating cost synergies (estimates) provided in Iluka's demerger booklet.

Figure 5: Where to from here? SRX's path to valuation (base case) growth, via Sembehun



With a target price of A\$0.45, SRX is trading at a sharp discount, offering ~125% capital upside potential.

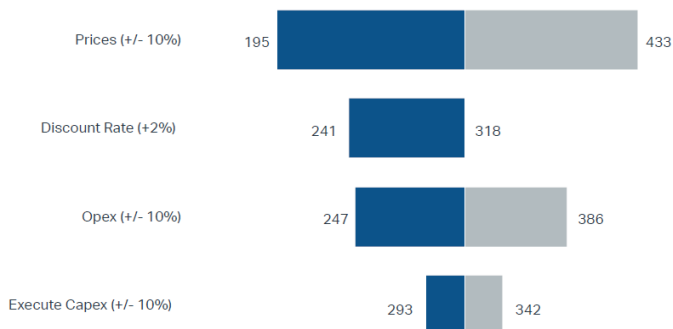
Source: Morgans estimates, company data. Note: 2022 to 2026, WACC of 14%. P1 = Phase 1, P2 = Phase2, Const = construction, Comm = commissioning, Prod = Production, Sem = Sembehun

- Path to growth, via Sembehun:** Figure 5 shows the growth profile from CY2022 to CY2027, with the timings of risk-adjusted rerating to the valuation based on the development schedule provided by SRX (Figure 29). Note we have factored in (assumed) potential delays associated with project execution.

Sensitivity analysis

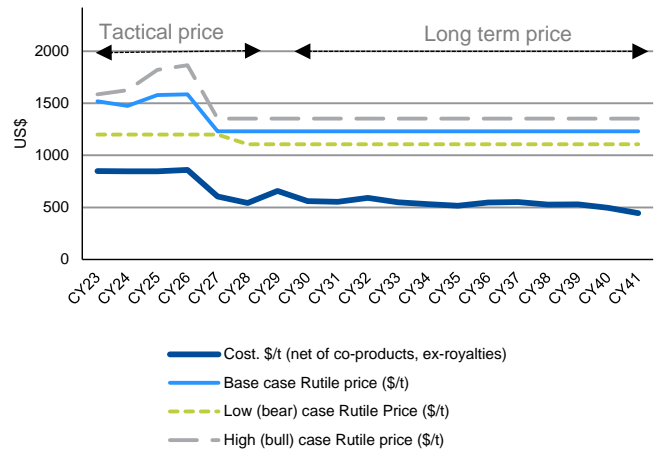
Typical of any mining company, particularly within commodities, SRX's earnings and valuation are sensitive to long-term rutile prices and pigment markets.

Figure 6: Sembehun PFS NPV sensitivities (US\$m)



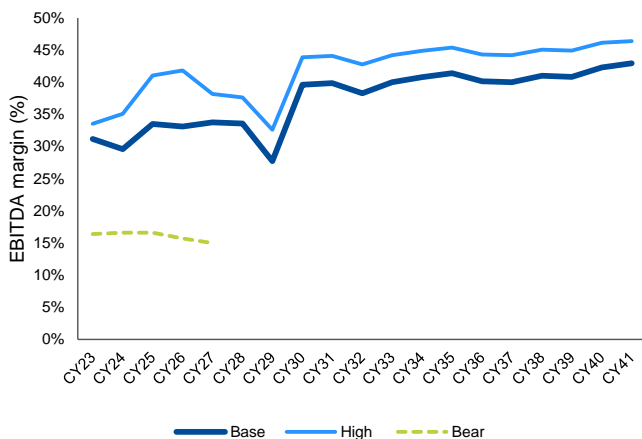
Source: Iluka demerger booklet

Figure 7: Rutile price assumption for DCF scenarios



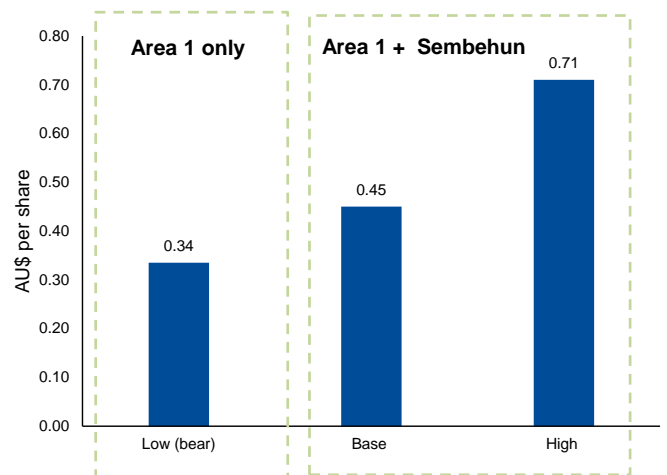
Source: Morgans estimates

Figure 8: EBITDA margin under different price scenarios



Source: Morgans estimates

Figure 9: Valuation under different price scenarios



Source: Morgans estimates

Opportunity to generate attractive returns for relatively low risk via development of Sembehun.

We test the sensitivity of SRX's earnings and valuation to rutile price scenarios ranging through a: 1) bear, 2) base, and 3) bull case. We note:

- Our valuation under bull case pricing rises to 71cps (255%)
- Our valuation under base case pricing rises to 45cps (+125%)
- Our valuation under bear case pricing rises to 34cps (+70%)

Bear case pricing assumes significant softening in rutile prices, leading to temporary suspension of the Sembehun project.

These scenarios highlight the current SRX share price is trading at a sharp discount under different price scenarios.

Growth focus

SRX's focus on Sembehun will enable continued production of high-quality rutile. This ensures sustainability and longevity of SRX as Area 1 nears its mine life. Free cashflow generated from Area 1 operations will be deployed to fund the Sembehun growth project.

Synergies - Area 1 and Sembehun

Our view on potential synergies between Area 1 and Sembehun include:

Shared infrastructure: Sembehun will leverage Area 1's existing equipment and infrastructure (port/ MSP/storage) to lower costs.

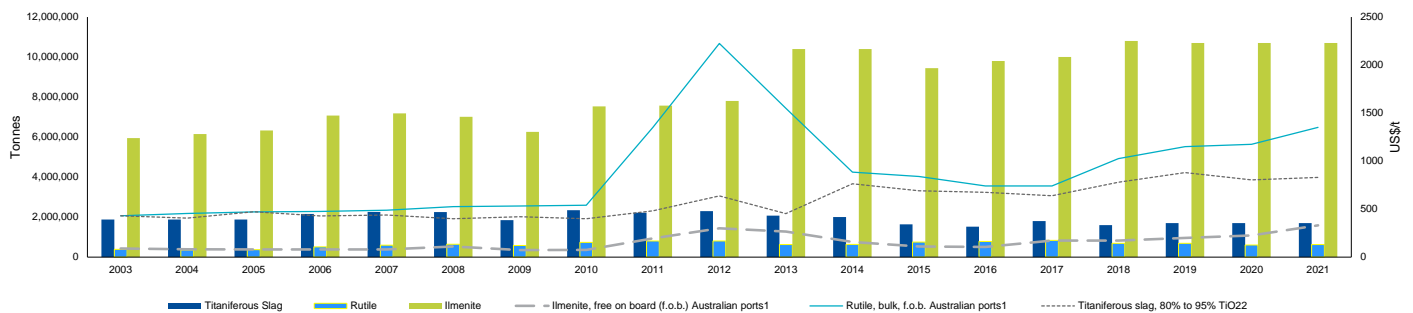
Geology: We expect Sembehun's contiguous ore body to lower sustaining capex requirements. Two-thirds of Area 1 capex is associated with civil works (road construction/maintenance) across multi-mine deposits.

Higher percentage of Ilmenite further reduces cost (US\$/t) net of by-products.

Construction of wet concentrator plants (WCP) at Sembehun: will enable higher run rates, reduced downtime, resulting in higher throughput.

Titanium feedstock (TiO₂) and rutile market outlook

Figure 10: Global titanium production vs price, 2021



Source: US Geological Survey, Morgans estimates

Large-scale rutile deposits are uncommon. Rutile production volumes are materially lower than ilmenite, commanding premium pricing (~1500 US\$/t).

Pricing titanium feedstock (TiO₂)

Titanium dioxide is mined as ilmenite or rutile (or other variants of titanium dioxide e.g., leucoxene). Ilmenite accounts for about 90% of the world's consumption of titanium minerals, while rutile accounts for about ~7% of consumption.

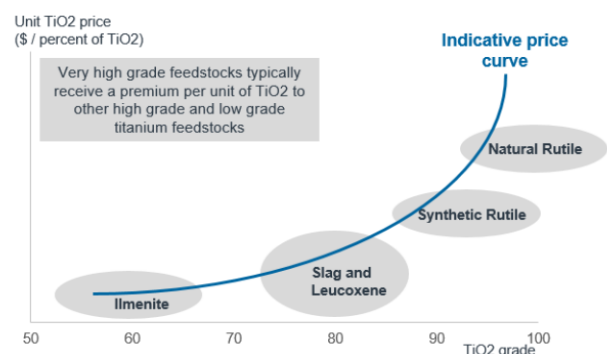
Feedstocks are either sold as raw minerals (rutile or ilmenite) or as upgraded feedstocks. Upgrading involves the process of chloride or sulphate ilmenite being heated in a furnace to remove impurities (mostly iron) and increase the TiO₂ content. Upgraded feedstocks are synthetic rutile, chloride, and sulphate slag.

Figure 11: TiO₂ feedstock

Form of titanium dioxide	TiO ₂ %
Rutile	95-97
Synthetic rutile	88-95
Ilmenite	
- sulphate	52-54
- chloride	58-62
Slag	
- sulphate	80-85
- chloride	85-90
- upgraded	95

Source: Iluka

Figure 12: Titanium feedstock pricing by TiO₂ grade



Source: Iluka

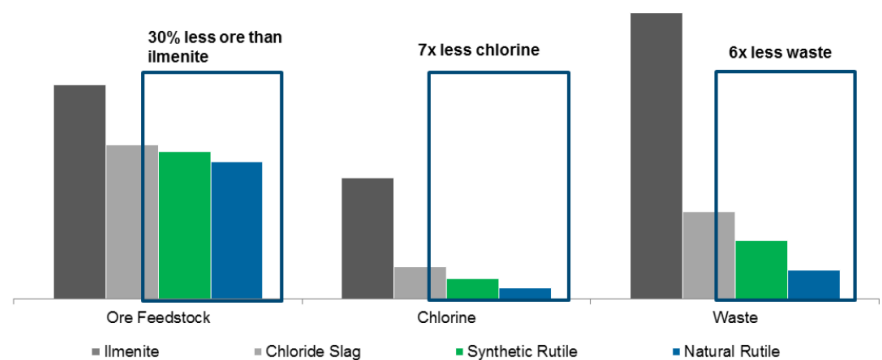
Two-thirds of SRX's natural rutile is used in applications, where the highest quality feedstock is favoured for technical or environmental reasons.

Titanium product prices are based on value in use, with price increasing by titanium grade, as per Figure 12. Most high-grade titanium feedstocks are sold to major pigment or titanium metal customers on contractual periods, typically less than 12 months. Ilmenite, leucoxene, rutile, slag, and synthetic rutile compete as feedstock sources for producing TiO₂ pigment, titanium metal, and welding-rod coatings.

Benefits of natural rutile

- Fewer contaminants, which can be end-use critical.
- Higher TiO₂ content means less ore is required (reducing freight) and less waste is generated (landfill, waste treatment and emissions).
- Lower chlorine/petcoke consumption and higher chlorinator utilisation.
- Lower energy/carbon consumption.

Figure 13: Key differentiators - natural rutile vs. other Ti feedstock



Source: Iluka

Demand dynamics

Demand for natural rutile is supported by its high grade, low impurity characteristics and the configurations of chloride pigment manufacturing plants globally. Key titanium markets:

Titanium pigment is by far the largest end use of titanium feedstocks, accounting for around 90% of demand. It is primarily used as a whitening pigment in paints, plastics, and paper. Average annual growth of this segment is broadly in line with global GDP growth. 80% of natural rutile from SRX is used in the pigment industry.

Titanium metal/sponge has experienced stronger growth with increasing use in aeronautics (body and engine parts), defense applications, biomedical and sporting goods. 14% of SRX's rutile is used in titanium metals, despite metal as an end-use application comprising just 4% of total global demand for titanium feedstocks.

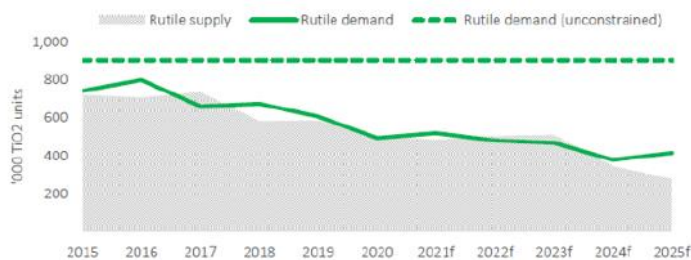
Welding flux cord is used in ship building and steel construction applications, with 6% of rutile from SRX used in welding.

Sierra Leone supplies ~20% to 25% (material contributor) globally of natural rutile to the Ti pigment and metal industry.

Supply story

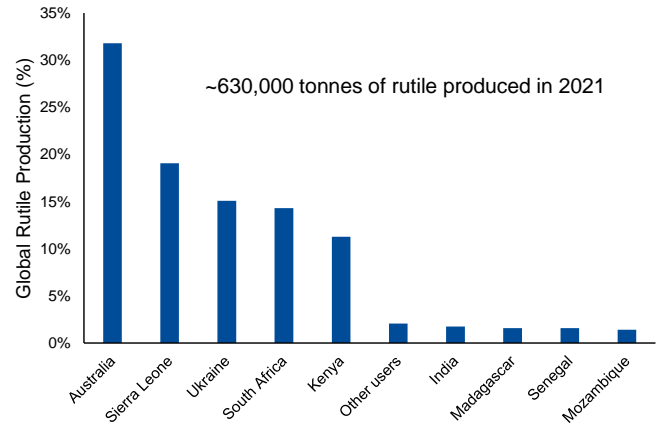
As per the Iluka demerger booklet, TZMI states that rutile consumption is currently supply constrained and expects demand will match supply in the near term before entering a market deficit in the longer term. Sierra Rutile is a material contributor of natural rutile, providing ~20% to 25% of global natural rutile to Ti industry.

Figure 14: Natural rutile supply outlook



Source: Iluka demerger booklet

Figure 15: Global rutile production, 2021



Source: US Geological Survey, Morgans estimates

Our view on the natural rutile market

Rutile-rich deposits are relatively uncommon, with few contaminants, supply constraints (declining grades), and a strong end user demand (Figure 14), although global uncertainty (inflation, central bank intervention) may dampen pigment industry demand, potentially softening rutile prices.

Our current view is that rutile prices will remain steady due to supply deficit, as large-scale natural rutile deposits are uncommon (majority have a lower percentage of rutile in their assemblage).

Peer comparisons

It is challenging to compare mineral sands operations, as the weighting of each mineral (rutile, ilmenite, leucosene) varies significantly by deposit.

For this reason, our peer comparison is biased toward predominantly high value rutile producers/operations (higher percentage of rutile in their assemblage).

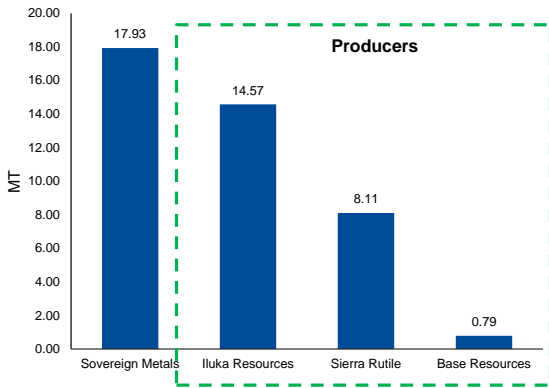
Figure 16: Peer comps of rutile dominant producers and developer

Company	Market Cap	EV/Resource	EV/EBITDA	Notes
Iluka Resources	\$4.4b	31.6	5.0	Not covered
Sierra Rutile	\$84.8m	2.2	0.8	Add
Base Resources	\$256.2m	7.0	0.8	Not covered
Sovereign Metals	\$226m	5.6		Not covered

Source: Factset, Morgans estimates. Note: Sovereign Metals is a developer, with Kasiya project undergoing PFS.

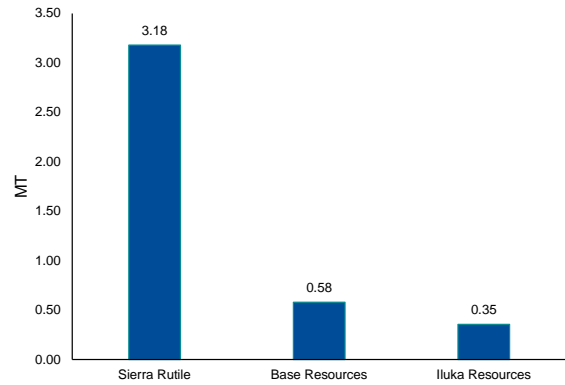
In our peer comparison, we have intentionally excluded vertically integrated companies covering the entire supply chain, from titanium mining through to production of various titanium end products (slags) e.g., Rio Tinto (QMM, QIT, RBM operations), Tronox (Namakwa Sands, KZN Sands operations), and Ukraine’s Group DF (Vilnohirska and Irshansky).

Figure 17: Contained rutile resources



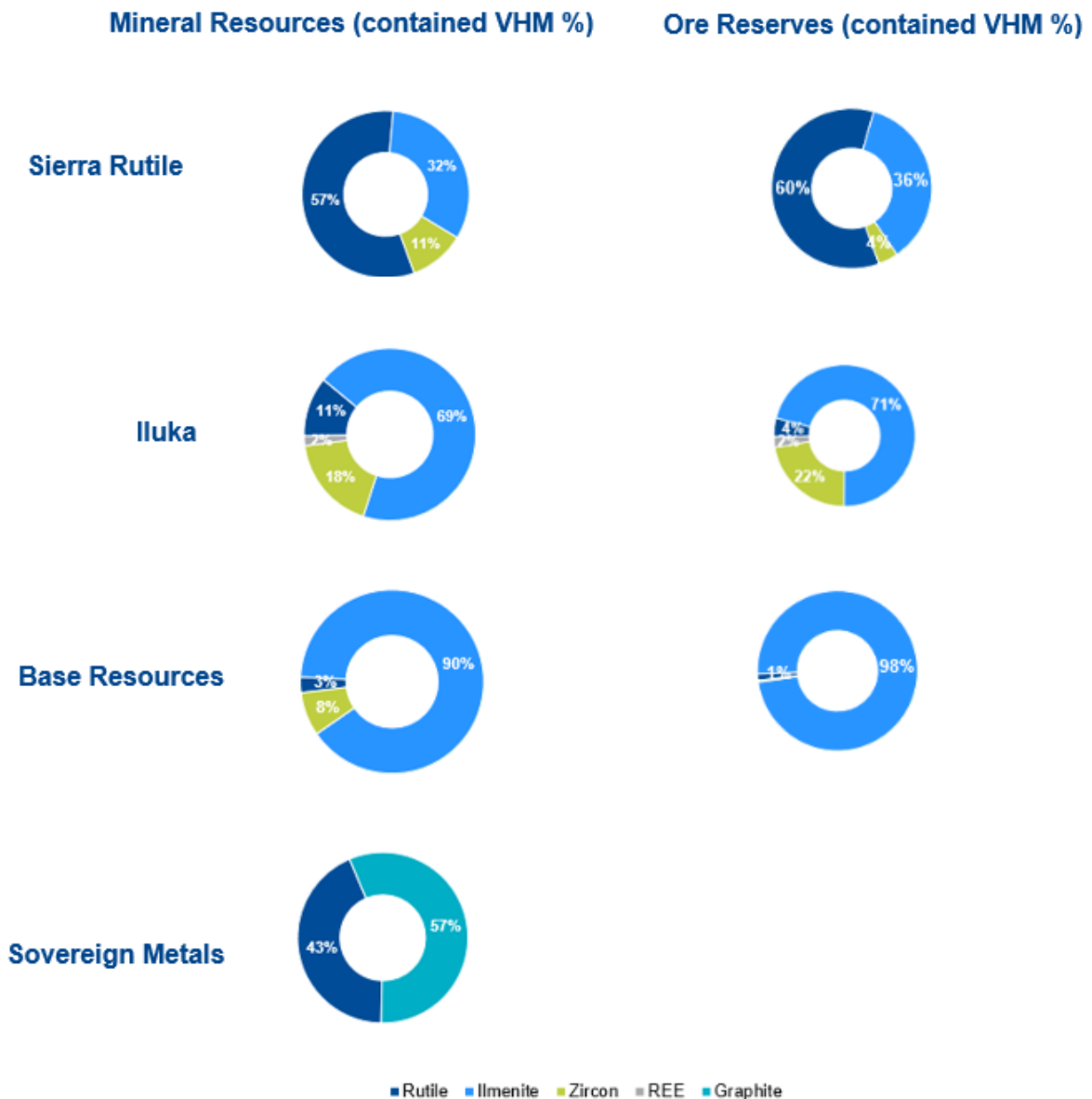
Source: Morgans estimates

Figure 18: Contained rutile reserves



Source: Morgans estimates, Iluka reserves include East Eucla, Eneabba, WA-Mid-West, and WA South West, as per 2021 reporting

Figure 19: Resource & Reserves comparison – Unpacking complex VHM landscape



Source: Morgans estimates, (minor amounts of leucocoxene excluded from reporting). VHM = valuable heavy minerals. Iluka Resource & Reserve, 2021. Iluka reserves include East Eucla, Eneabba, WA-Mid-West, and WA Southwest. Base Resource & Reserve, 2022, Sovereign Metals Annual Report, 2022, Iluka Demerger booklet

Deep dive - SRX's operation and growth project

SRX's business strategy is to maximise cash flows from the existing Area 1 operation, advancing potential mine life extension opportunities and bringing the significant Sembehun Project into production.

Area 1- Project overview

Area 1 is SRX's primary existing operation and consists of two mines at Lanti and Gangama, a mineral separation plant, 4 WCPs, and a dedicated port facility.

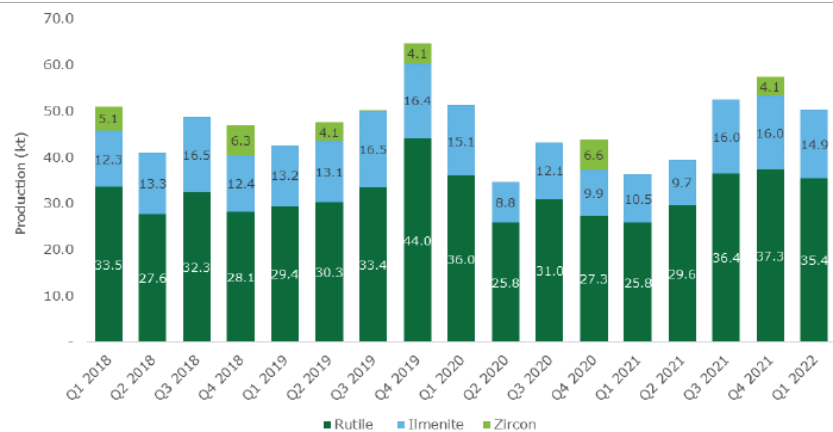
SRX's main product is natural rutile, although quantities of ilmenite and ZIC are also produced. The operation deploys truck and excavator mining method, ore is processed via WCP and MSP to produce: 1) standard grade rutile, 2) industrial grade rutile, 3) high-grade ilmenite, and 4) ZIC.

The final rutile product contains at least 95% titanium dioxide. Products are exported through the Nitti Port facilities situated in the Area 1 mining lease. The mine also maintains an extensive network of water supply ponds, power generation facilities, accommodation for senior and management staff, offices, extensive workshops, laboratory, clinic, and roads. SRX employs a combination of owner operator and contract mining services at Area 1.

Area 1 Historical production and cost profile

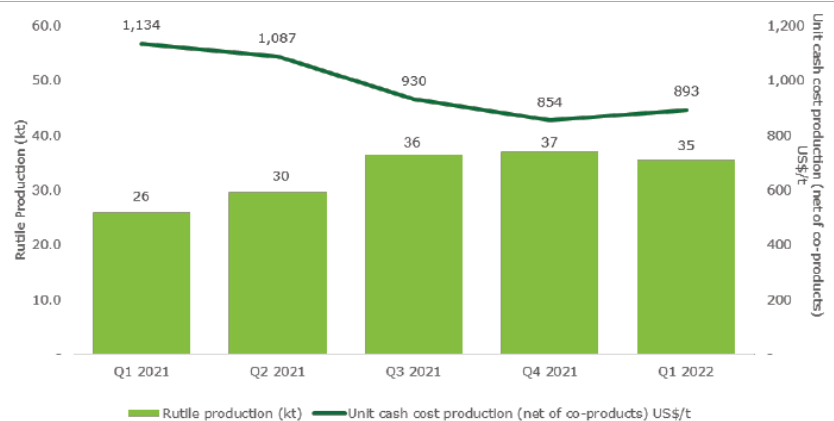
- Historical production of 119kt to 136kt of rutile, with additional Ore Reserves: As of 31 December 2021, 38Mt @ 1.42% for 541kt of contained rutile and exploration potential to further extend life of Area 1.
- Unit cash cost (net of co-products) of production trending down due to increased run time via proactive maintenance initiatives.

Figure 20: Area 1 – Production from SRX from Q1 CY2018 to Q1 CY2022



Source: Iluka demerger booklet

Figure 21: Area 1 – Production from SRX from Q1 2021 to Q1 2022



Source: SRX, Iluka demerger booklet

Current mining rate and life of mine (LOM)

- Area 1 Ore Reserves: 38Mt @ 1.42% for 541kt of contained rutile.
- Area 1 Mineral Resources: 205Mt @ 1.04% for 2.1Mt of container rutile.

Figure 22: Area 1 – Current reserves by deposit as of 31 December 2021

Deposit	Material Tonnes (Mt)	In Situ Rutile (%)	In Situ Rutile (Mt)
Gangama (inc ROM)	11.8	1.4	0.17
Gbeni North	19.0	1.3	0.25
Lanti	4.9	1.8	0.09
Taninahun	2.5	1.4	0.04
TOTAL	38.2	1.4	0.54

Source: SRX

Exploration upside and mine life extension

- The Pejebu and Ndendemoia deposits are located less than 5km south of the MSP within the Mining Lease. A mine life extension work program to support the conversion of Indicated Mineral Resources to Ore Reserves at Pejebu and Ndendemoia is scheduled to be completed by mid-2023.

Figure 23: Area 1 – Target resources in mine life extension program

Deposit	Material Tonnes (Mt)	In Situ Rutile (%)	In Situ Rutile (Mt)
Pejebu			
<i>Indicated</i>	18.6	1.0	0.18
<i>Inferred</i>	4.8	1.0	0.05
Ndendemoia East			
<i>Indicated</i>	14.3	1.1	0.16
Ndendemoia West			
<i>Indicated</i>	4.0	0.6	0.03
TOTAL	41.7	1.0	0.40

Source: SRX

Our view - life of mine extension potential

- Based on reserves, resource, and exploration upside, we anticipate Area 1 to continue to at least 2027 at 130kt to 144ktpa.

Favourable fiscal scheme

- Favourable tax and royalties structure – 1% tax and royalty scheme (0.5% tax on turnover + 0.5 % royalty) means SRX is well positioned to maximise the value of Area 1's remaining operations.

Rehabilitation obligations funded

- As part of the demerger, Iluka established a US\$45m cash funded rehabilitation trust to support Area 1 rehabilitation obligations.

Area 1 infrastructure

SRX has significant and long-standing infrastructure at its Area 1 operation.

Port

- The port facilities are located at Nitti, approximately 4km south of Gbangbatoke and 15km from the MSP.
- The facilities include an office building, other support (including a generator building) and storage buildings, two product storage domes, loading facilities, marine fuel oil and diesel storage tanks, barges and two push boats.

Power

- Existing power supply system that is an entirely stand-alone or “island” system without any interconnection to non-SRX systems.
- The main electrical power source for SRX consists of a 27.2MW marine fuel oil fuelled powerhouse and distribution and transmission equipment. There are subsidiary stand-alone generators in use across the operation (e.g., Nitti Port).

Roads

- SRX maintains an extensive network of gravel roads within Area 1, which it utilises to haul product and materials between various operations and for mine personnel to access areas within Area 1.
- The main haul roads connect the Lanti and Gangama areas to the MSP complex and product from the MSP is hauled to Nitti Port via road. There are also access roads that connect the main residential camp areas to operational areas as well as access roads between operational areas and roads that connect historical mining areas to current operational areas.
- Several roads within Area 1 are used by the public but most are maintained by SRX as a significant portion of roads are public roads that have been upgraded by SRX to haul roads.

Water

- SRX has an existing water treatment plant with an output capacity of about 950 litres per minute, treating water supplied from the Mogbwemo Domestic Reservoir to produce potable water up to World Health Organisation drinking water quality standard.
- The potable water is then pumped to the mine offices and residential camp areas and stored at the water treatment plant in two storage facilities with a combined capacity of 84,300 litres to provide piped water for the mine camp houses, dormitories, the MSP and offices.
- Annual tails strategy and water balance updates are conducted as part of the life of mine (LOM) process.

Mine camps

- Mobimbi mine camp was developed by SRX for management level employees and is located approximately 4km southwest of the MSP. The camp consists of housing, mess facilities, gym, laundry, and a swimming pool.
- South Spur, forming a part of the Mobimbi housing complex, is located to the south of Mobimbi and is mainly used for contractors. The combined area of Mobimbi and South Spur is approximately 205 hectares.
- Area 1 has an additional residential camp located adjacent to the MSP area (Kpanguma) used to house senior SRX staff.
- The three on-site camps can accommodate approximately 470 people.

Sembehun - of the world's largest and highest-grade natural rutile deposits.

Fleet

- SRX owns and operates various heavy-duty vehicles and mining equipment across its mining operations. These vehicles are primarily used to excavate and move ROM ore/feed to the concentrator plants, as well as to assist with maintenance and rehabilitation.
- SRX's fleet is complemented by mining contractors and their associated fleet.

Sembehun Deposit - Project Overview

The Sembehun Deposit, located approximately 30 kilometres from the current Area 1 operations, is one of the largest and highest quality known rutile deposits in the world.

Pre-feasibility study (PFS)

In June 2022, Iluka completed a PFS on the Sembehun Deposit, which the company (Iluka) estimated has an NPV of US\$318m, and > 13 years of mine life.

Sembehun will be a truck and excavator operation, with ore to be processed in a new wet processing plant (at Sembehun) to produce heavy mineral concentrate (HMC). The HMC will be carted via trucks to the existing MSP complex (at Area 1), where it will be processed into the various products and transported via Nitti port.

Iluka estimated US\$336m in capex to develop the Sembehun project. Pre-production capital cost will be staged in Phase 1: US\$284m, and Phase 2: US\$52m, with a construction period of 18-24 months for each phase.

Staging capex helps SRX utilise cash flows generated from Area 1 to assist in funding the development of Sembehun.

Capex and opex breakdown

Capex – Phase 1

- Completion of Phase 1 will provide a complete operating facility.
- All civil works, concrete foundations and underground utilities related to the overall project will be completed during Phase 1 to take advantage of construction efficiencies.
- Estimated Stage 1 development capex is ~US\$284m (summary below).
- Includes construction of WCPs, non-process infrastructure, and mine development.

Figure 24: Capex breakdown

Sembehun Capital Cost Breakdown (real, US\$m)	Phase 1	Phase 2	Total
Direct			
Mine development	4	-	4
Wet concentrator plant	83	21	104
Mineral separation plant	-	4	4
Non-process infrastructure	46	1	46
Indirect			
Indirects ²	90	16	106
Contingency ³	63	11	73
Project total costs	284	52	337

Source: Iluka demerger booklet.

Note:

The target accuracy for the PFS capital estimate is within the following ranges: +20% to +50% on the high range and -15% to -30% on the low side before the contingency is considered, which represents AACE Class 4 Preliminary Feasibility estimate;

2. Indirect costs include project management, technical services, EPCM, sub consultants, temporary construction facilities, site wide capitalised costs, commissioning, start-up inventories, spares, insurance, land acquisition and freight costs;

3. Contingency costs represent 28% of the base capital expenditure estimate.

Capex – Phase 2

- Phase 2 will include the second ROM tip with scrubber, a second concentrator and the second stacker/storage area.
- Estimated Stage 2 development capex is ~US\$52m.
- Indirect costs include project management, technical services, commissioning, start-up inventories, spares, insurance, and freight costs.

Opex - Phase 1

- Phase 1 operating costs encompass the first 24 months of operations, during which it is assumed the plant will operate on 50% capacity (1,016 tph, nominal throughput at 76.5% utilisation).

Opex - Phase 2

- Phase 2 represents 100% capacity operations at Sembahun phase 2 (2,032 tph, nominal throughput at 76.5% utilisation).

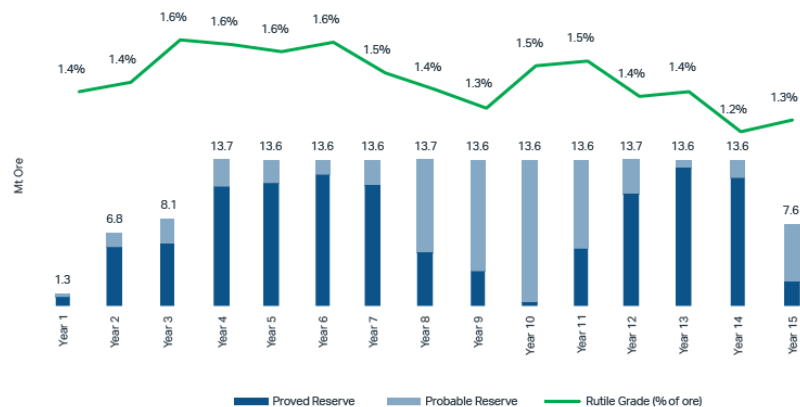
Figure 25: Sembahun – Capital expenditure estimate

Sembahun Operating Cost Estimate (real, US\$/t of rutile)	Phase 1	Phase 2
Mining	191	250
WCP	218	176
Logistics to MSP	35	35
MSP	108	100
Logistics to Port	10	10
Port	22	12
Overheads	456	228
Selling Costs	6	6
Total operating costs	1,048	818

Source: Iluka demerger booklet

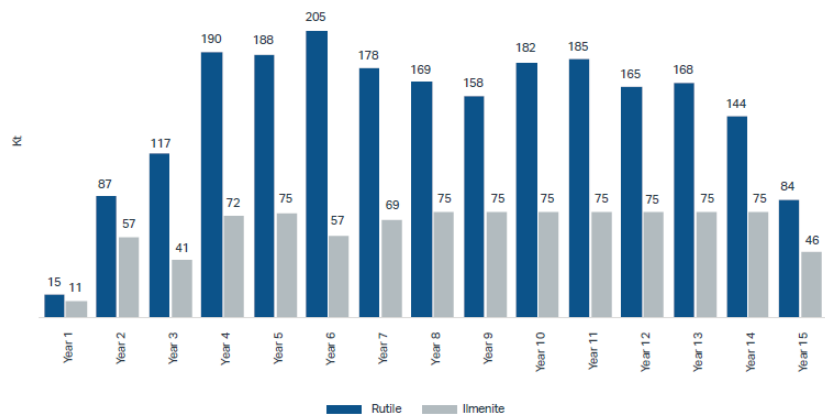
Production profile

Figure 26: Mining profile and grade outlook



Source: Iluka demerger booklet

Figure 27: Sembehun LOM rutile and ilmenite production profile



Source: Iluka demerger booklet

Ore Resource and Reserves

Figure 28: Sembehun LOM rutile and Ilmenite production profile

	Ore Tonnes	In-situ rutile (%)	In-situ Rutile (MT)	In-situ ilmenite (MT)	In-situ Zircon (MT)
Ore Reserves	173.7	1.5	2.54	1.59	0.18
Min Resources	507.8	1.1	5.53	3.73	0.41

Source: Iluka demerger booklet

Infrastructure

Port

- The existing port facilities located at Nitti will be utilised to export Sembehun’s final products. No additional storage facilities are required.

Power

- Sembehun’s mining operation has a maximum power requirement of approximately 13.5MW. The normal operating demand of the power plant is expected to be approximately 11.5MW. The 13.5MW (absorbed) includes an additional 15% design margin on the normal operating load to cater for voltage/frequency control and to operate the machines at a more efficient load point.
- An independent power producer (IPP) solution has been selected as the preferred power solution for the Sembehun DFS. The IPP proposed power plant includes a hybrid solution where a portion of the power is delivered through solar photovoltaic and battery energy storage systems. The amount of renewable contribution for the power plant will depend on the final load profile of the mining operation. It is expected that the renewable portion will contribute up to 30% of the power supply.

Roads

- In addition to utilising existing road infrastructure for Sembehun, new access, haul and site roads and bridges will be constructed where needed.

Water

- All Sembehun WCP run-off stormwater will be captured and drained to a silt trap and ultimately discharged to the process water dam (PWD). This will be the source of raw water and allow for recirculation back into the Sembehun WCP. An estimated PWD available capacity of ~2.0Mm³ is required.
- The raw water abstracted from the PWD will be pumped to the package water treatment plant (PWTP) to provide potable water for the plant facilities and the accommodation camp. The PWTP will treat raw water to potable water quality at a rate of 3.6m³/h. The potable water will be pumped from the PWTP to an elevated storage tank at the accommodation camp.

- The sewerage reticulation network covers both the plant and the accommodation camp which is integrated into a single network and will flow under gravity conditions.

Mine camps, buildings and other facilities

- A new 113-person camp at Sembehun will be required to be built onsite to accommodate senior and management staff directly involved in the Sembehun operations.
- All facilities in the camp will be modular type buildings and include:
 - laundry;
 - kitchen and dining area;
 - recreational room;
 - ablutions; and
 - office.
- The following buildings that are currently used in the mining and processing of the Area 1 deposits will also be utilised for Sembehun:
 - administration buildings;
 - laboratory;
 - senior and management staff accommodation; and
 - some workshops and stores, although satellite facilities will be constructed as part of the Sembehun Project.

Fleet

- The Sembehun PFS assumes a contract mining operation whereby key mining fleet is owned and operated by the contract miner.

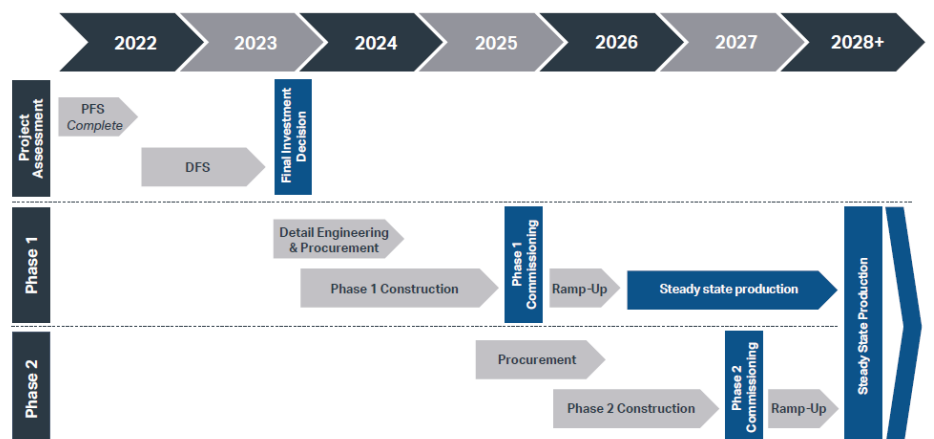
Waste management

- Only small amounts of waste will be generated due to the size of the plant and accommodation camp. The waste (general and organic) will be taken off site to the current Area 1 domestic waste facility where it will be sorted in the appropriate manner in line with the current Environmental, Social and Health Impact Assessment (ESHIA).

Sebehum DFS timeline

SRX has commenced a DFS via Hatch engineering firm. DFS outcomes will take approximately 12 months, allowing a final investment decision (FID) late 2023.

The scope of the DFS is to firm up capex, engineering design and execution schedule.
Figure 29: Area 1 – Target resources in Mine Life Extension Program



Source: SRX

Management team

Under CEO Theuns De Bruyn's leadership, the experienced management team has made steady progress and followed a back-to-basics principle, concentrating on the right set of contractors, focusing on preventative maintenance and safety/community welfare initiatives. The results? – increased run rates from 55% to 73%, higher production volumes, and an optimised fixed cost base. The operational improvements have been well supported by steady rutile prices (c.US\$1500/t). Management is well positioned to maximise Area 1 operating cashflows and leverage existing infrastructure to further extend the life of Sierra Rutile via the Sembehun project.

Figure 30: Management Team



Source: SRX

Sierra Leone – Country overview

Sierra Leone is a coastal nation in West Africa, known for its vast and numerous beaches, as well as its rainforests and wildlife reserves. Agriculture, as the primary occupation, employs two-thirds of the labour force and accounts for 66.8% of the country's gross domestic product. Sierra Leone also possesses substantial mineral resources, particularly iron ore, and has relied on mining for its economic base in recent years. In addition, the country is among the largest producers of titanium and bauxite.

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Analyst owns shares in the following mentioned company(ies): Sierra Rutile Holdings

Morgans Corporate Limited was engaged as an adviser by Sierra Rutile in relation to the proposed scheme of arrangement and demerger from Iluka Resources and may receive fees in this regard.

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