

Akora Resources, AKO.AX

Finally, a compelling iron ore play



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Front cover: Drill camp at Bekisopa. Source: Akora

Executive summary

Akora Resources owns the rights to the Bekisopa (100% owned), Tratramarina (100%) and Ambodilafa (90%) iron ore projects in Madagascar. The most advanced project is Bekisopa, for which Akora published Mineral Resource estimates in March and April 2022. A Scoping Study was completed in November 2022. The company aims to publish a Pre-Feasibility Study (PFS) focusing on an initial direct shipping ore (DSO) operation in late-2023.

Akora looks unjustifiably cheap: The valuation framework is based on valuing Akora at a percentage of NPV prior to production, and at a multiple of earnings once production commences. The 'base case' valuation assumes a 10-year 2Mtpa DSO operation at Bekisopa, resulting in an estimated post-tax NPV₁₀ of US\$430m (A\$615m at A\$:US\$0.7) and an IRR of 37%. **Trading at an enterprise value of less than 2% of NPV, Akora shares look incredibly undervalued.** As a broad rule of thumb, projects at the PFS stage can trade at around 20% or so of NPV. Akora expects to be in this position about a year from now. **Valuing Akora at 20% of NPV would support a valuation of A\$1.46/share.**

As Bekisopa enters production, Akora should be valued on earnings. Assuming estimated EBITDA of US\$187m in 2028, the first full year of production, financing of 70% debt and 30% new equity issued at A\$0.73/share, and an EV/EBITDA multiple range of 3-6x, Akora could be valued at A\$2.70/share to A\$6.44/share. This is 16x to 38x the current share price. If the market starts factoring in earnings by late-2026 when the project is expected to start-up, it would represent an annual return of 100% to 148% over the next four years.

Taken in the context of Akora's current (vastly undervalued) share price, these valuations may look high, yet they are based on mining only 20Mt of outcropping and near surface weathered material that represents just 2-4% of the 500Mt to 1,000Mt exploration target. No value is ascribed to further developments at Bekisopa, the regional opportunity which comprises several Bekisopa 'lookalike' magnetic anomalies, or other projects.

Significant potential upside to valuations: Two upside scenarios are considered in which Akora produces 2Mtpa of either 65% iron fines or 69.7% iron concentrates for 15 years commencing in 2036, year 11 of the project. The **DSO and Fines** scenario boasts a post-tax NPV₁₀ of US\$554m (A\$792m) and the **DSO and Concentrates** scenario an NPV₁₀ of US\$598m (A\$855m). Realistically, further studies will ascertain the economic opportunity of building a concentrates plant of greater scale than envisaged herein.

Financially robust project, with substantial cashflows: The DSO scenario envisages annual production of 2Mtpa. This is based on 20Mt, being the top end of the exploration target for surficial material as set out in the IPO Independent Geologist's Report, being mined over 11 years including start-up. Assuming a 64% Fe-content DSO selling price of US\$130/t CFR China, and estimated cash operating costs of US\$38/t, the project would be expected to generate annual EBITDA of US\$187m pa at full production, at an EBITDA margin of 70%. The project is expected to generate US\$321m in the first three years of operations, including start-up.

Capital expenditure for the DSO operation is conservatively estimated at US\$222m, including a contingency of US\$44m. This represents 14 months EBITDA at full production. Low operating costs reflect the high-grade, near surface nature of the deposit.

Bekisopa boasts significant geological advantages: Akora's maiden Inferred Resource, published just 16 months after the IPO, stands at 194.7Mt at a head grade of 32% Fe, for 75.4Mt of iron concentrates at a grade of 67.6% Fe. Davis Tube Tests (DTT), standard magnetic separation tests used in iron ore, demonstrate the iron mineralisation at Bekisopa is readily upgradable. Concentrates grading 67.6% Fe can be achieved from a cut-off grade of 15% Fe and concentrates grading 69.7% Fe from a cut-off of 25-45% Fe, both at relatively coarse grain sizes of 75μm (microns). (Projects in Western Australia typically require fine grinding to 10μm to 38μm for magnetic separation). Ore recoveries, measured by DTT, are also higher than at many Australian projects, meaning less material has to be processed to achieve the same volume of product.

Crucially, impurity levels are low. The Inferred Resource has combined silica oxide (SiO₂) and alumina (Al₂O₃) of 2.4%. Davis Tube Tests conducted on samples from four drill holes returned SiO₂ and Al₂O₃ levels ranging from 0.55% (drill hole BEKD04) to 1.9% (BEKD10).

In direct reduced iron (DRI), the iron ore is 'reduced' (oxygen is removed) without melting. This requires higher grades of iron, typically greater than 67%, and very low impurity levels with SiO_2 and Al_2O_3 less than 3.5%, and ideally less than 2%. **These deposits are scarce.**

Akora's results to date demonstrate **Bekisopa has the potential to produce very clean, premium grade iron concentrates suitable for DRI pellet production**. Notably, the DTT results demonstrate higher concentrates grades can be achieved from higher head grades. Coarse grain sizes and good recoveries indicate that this can be achieved cost effectively.

Green steel to create huge demand for cleaner feedstock: Steel is ubiquitous in modern life, yet steelmaking is energy and carbon intensive. Iron and steel production accounts for more than a quarter of final industrial energy consumption and about a quarter of all industrial CO₂ emissions, with direct carbon emissions of ~2.6 gigatonnes of carbon dioxide (Gt CO₂) pa. Limiting the rise in global temperatures to 1.5°C in line with the Paris Agreement will require huge changes, including commercialising technologies such as hydrogen-based DRI and a wholesale switch to electric arc furnaces (EAFs). Crucially, it will require higher quality feedstock. Wood Mackenzie estimates the consumption of high-grade iron ore pellet feed will have to increase 5.5x to 750Mt by 2050.

As steel sector decarbonisation gathers pace, deposits that can meet DRI specifications such as Bekisopa are set to become of far greater importance.

Huge potential exploration upside at and around Bekisopa: Ground magnetic surveys completed at Bekisopa in 2019 showed that magnetite mineralisation continues at depth, with geophysical modelling suggesting to at least 500m in some places. Wardell Armstrong, the consultants that prepared the IPO Independent Geologist's Report, put forward an **exploration target of 500Mt to 1,000Mt grading 30-60% Fe.**

Historical magnetic surveys of the wider area highlighted a number of significant magnetic anomalies. At Satrokala, located 40km southwest of Bekisopa, the anomaly suggests a strike length of about 10km and a width of about 1,200m. That is, bigger than at Bekisopa. In Akora's rock chip sampling, two-thirds of the 103 samples returned an average Fe grade of 64.5%. Satrokala has potential to host mineralisation suitable for DSO. It is also 40km closer to Toliara port.

West of Bekisopa, three other large magnetic anomalies have had no rock chip sampling or drilling work completed to date and offer further exploration potential.

Altogether, including Bekisopa and Satrokala, these anomalies have a total strike length of about 40km. Akora has only drilled 2km.

Other projects offer longer-term potential: In addition to the phenomenal opportunity at and around Bekisopa, Akora owns the Tratramarina and Ambodilafa projects on the east coast of Madagascar. The company conducted rock chip sampling and a 7-hole drilling program at Tratramarina in 2009-2012, returning solid results. Management views the project as a priority exploration target with excellent potential for upgradable magnetite iron ore grading 25-35% Fe. At Ambodilafa, an airborne magnetic survey conducted in the mid-2000s identified a strong north-south trending magnetic anomaly that suggests the presence of iron ore.

Resource update expected early-2023: Akora's recently completed in-fill drilling program at the Bekisopa Southern Zone aims to increase confidence in the resource. All 85 shallow drill holes intersected mineralisation. Assay results and a resource update are expected in early 2023.

Akora is bound to attract attention: Although iron ore is a huge sector with sales of ~2.5bn tpa, there are relatively few mid-tier independent companies with high quality projects. Bekisopa has demonstrated high grades with low impurities. The project is ideally placed to supply the fast growing Indian and Middle Eastern markets. ArcelorMittal has described India as the "Next Frontier of Accelerated Growth" and is expanding its Indian operations rapidly. Akora has enormous potential for further resource upside. **It seems inevitable the company will attract strategic interest.**

Highly experienced management team: Akora's management team brings together key skills in project development, metallurgy, risk assessment and business development. The team is led by Chief Executive Officer Mr Paul Bibby. Mr Bibby is a highly experienced metallurgist with more than 35 years' experience in technical and managerial roles in the mining industry including at Rio Tinto Aluminium (formerly Comalco), Kaltim Prima Coal and Rio Tinto Iron Ore (formerly Hamersley Iron) where he was manager of metallurgy at both Dampier and Paraburdoo. Mr Bibby later became Chief Development Officer at Nyrstar. He has also been CEO of a number of ASX listed companies. Mr John Madden, Chief Financial Officer, is an accountant with over 30 years' experience in accounting, business planning, strategy and acquisitions. Mr Mike Stirzaker, Non-Executive Chairman has over 30 years' commercial experience in mining finance and investment.

Share price catalysts: Assay results from the Southern Zone in-fill drilling program, completion of work streams towards a PFS, the PFS, potential offtake financing, a greater recognition among investors of the strengths of the Bekisopa project, and potential developments at other projects, are key factors expected to propel the share price.

In summary, Akora represents the trifecta of superb project fundamentals with huge potential upside, a strong macro story in steel industry decarbonisation, and a compellingly cheap valuation. When the market recognises this, it should drive a significant re-rating.

Simon Francis November 2022

Key financial data

Figure 1: Shareholding structure

ASX code		AKO.AX
Share price, 22 November, 2022	A\$/share	0.17
Shares on issue	Millions	72.2
Options and rights	Millions	12.1
Fully diluted shares	Millions	84.3
Market capitalisation	A\$ millions	12.3
Net cash, 30 September, 2022	A\$ millions	1.5
Enterprise value	A\$ millions	10.7
Top 20 shareholders		56.3%

Source: Akora, ASX, Orior Capital

Key Individuals:

Michael (Mike) Stirzaker, Independent Non-Executive Director: Mr Mike Stirzaker has a B.Com (University of Cape Town) and qualified as a Chartered Accountant (Australia) whilst working with KPMG. He has over 40 years' commercial experience, mainly in mining finance and mining investment with various companies including being Joint Managing Director of boutique resource adviser, RFC Group Limited, a partner of Tennant Metals, Finance Director of Finders Resources Limited, and from 2010 to 2019 was a partner at the private equity mining fund manager, Pacific Road Capital. Mike is currently the independent non-executive chairman of Base Resources Limited and Akora Resources Limited, and a non-executive director of Firestone Diamonds PLC.

Paul Bibby, Director and Chief Executive Officer: Paul is a metallurgist with over 35 years' experience across the mining and metals industry. Paul spent 23 years with Rio Tinto in various operational, technological and business development roles. Paul held a number of metallurgical management roles at Rio Tinto Aluminium (formerly Comalco), Kaltim Prima Coal and Rio Tinto Iron Ore (formerly Hamersley Iron) where he was manager of metallurgy at both Dampier and Paraburdoo. Paul joined Zinifex in 2004 as General Manager-Technology and played a leading role in the merging of the Umicore (formerly Union Miniere) and Zinifex zinc smelting businesses to form Nyrstar. As Chief Development Officer at Nyrstar, Paul was part of the management team that worked with bankers to raise around €2 billion in London and New York to fund the merger as well as return funds to the founding shareholders of Nyrstar. Paul was appointed chief executive officer of OceanaGold Corporation in 2009 and was instrumental in its equity raising activities in Europe and North America to improve its balance sheet and advance gold projects. In recent years, Paul has performed a number of "work-out" roles for Australian listed entities which involved various asset sales and reorganisations.

John Madden, Chief Financial Officer: John is an accountant with over 30 years' experience in the mining industry. John joined CRA Limited (now Rio Tinto) from the University of Melbourne in 1981 and held a number of corporate positions in accounting, planning, business analysis, taxation and strategy and acquisitions. Between 1996 and 2000, John was Manager Finance for the Rio Tinto/Freeport Joint Venture in West Papua. In 2000, John was appointed General Manager Finance for Morobe Consolidated Goldfields Limited in Papua New Guinea, where he was responsible for all

commercial, legal and risk assessment studies performed as part of the feasibility study for the development of the Hidden Valley Gold Project.

In 2003, John returned to Australia and joined Indophil Resources NL as General Manager-Commercial with responsibility for all accounting, business analysis, corporate secretarial, legal and taxation functions in Australia and the Philippines. John was also responsible for all commercial functions associated with the Indophil Pre-Feasibility Study for the Tampakan Copper-Gold Project, which ultimately led to the decision by Xstrata Queensland Limited to exercise its option to acquire a controlling interest in the Tampakan Copper-Gold Project. John resigned from Indophil at the end of 2007 and provided consulting advice to Indophil as well as other mining entities including the Australian Premium Iron Ore Joint Venture, Intrepid Mines Limited, Mesa Minerals Limited and Ok Tedi Mining Limited before founding Akora Resources in October 2009.

Thierry Andramihaja, Consultant Geologist and Community Relations: Thierry is a Geologist with nineteen years' experience working in exploration and mining industries. Thierry has worked as a Mine Geologist in Madagascar for Victory Mining Company and Filon Sarl. In 2007 Thierry joined Universal Exploration Madagascar as an Exploration Geologist which in 2011 became a part of Indian Pacific Resources involved in iron ore exploration in Madagascar. He has been involved in Ni, Co, Au, heavy mineral sands, gemstones and uranium exploration. Thierry gained his degree from the State University in St. Petersburg, Russia.

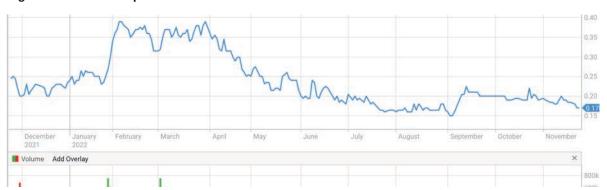


Figure 2: Akora share price chart

Source: ASX

Akora looks unjustifiably cheap

- ➤ Trading at less than 2% of NPV, Akora shares look unjustifiably cheap; valuing the company at 20% of NPV could underpin a valuation of A\$1.46/share
- As Bekisopa starts-up valuations could reach A\$2.70/share to A\$6.44/share based on typical sector multiples; this is 16-38x the current share price
- Share price catalysts include greater market recognition of Bekisopa's value, further exploration success, other project developments leading to a PFS, and developments at other prospects including Satrokala and Tratramarina

Base case valuations

The valuation framework is based on valuing Akora at a percentage of NPV prior to production, and at a multiple of earnings once production commences. **The 'base case' valuation is modelled as a simple 2Mtpa DSO operation for 10 years.** Two upside scenarios are considered. In the DSO and Fines, and DSO and Concentrates scenarios, the initial DSO operation is followed by a further 15 years of either fines or concentrates production, with this still restricted to 2Mtpa.

One year valuation of A\$1.46/share

Based on Akora starting production in 2026, ramping up to the full production of 2Mtpa by 2028, and DSO selling prices of US\$130/t CFR China, the Bekisopa DSO scenario boasts an initial estimated post-tax NPV₁₀ of US\$430m (A\$615m). This represents an NPV per share of A\$8.52. **Incredibly, the market is valuing Akora at just 1.7% of this NPV.**

Over the next year or so, management aims to complete a number of workstreams leading to a PFS targeted for late-2023. An updated Mineral Resource Estimate will be prepared incorporating assays from the Southern Zone in-fill drilling program. The company will undertake further crushing and screening trials to better define the metallurgical processing circuit for the DSO material. Plans for the road from Bekisopa to Satrokala and port and shipping options need to be evaluated. Pit optimisation, geotechnical, hydrological, and weather cycle studies will also be completed.

Valuing Akora at 20% of the DSO scenario estimated NPV, and thus ignoring the remainder of the resource and other opportunities, **could underpin a valuation of A\$1.46/share**. This is ~9x the current price.

Figure 3: Valuation framework and potential outcomes

Timeframe	Valuation A\$/share	Methodology	Comments
One year	1.46	20% of NPV	Based on a 2Mtpa DSO operation for 10 years
			No value included for subsequent fines or concentrates production, expansion around Bekisopa, or other projects Based on a long-run benchmark iron ore price of US\$109/t
2026	2.70 to 6.44	3-6x EV/EBITDA	Bekisopa ramping up from 2026, reaching full capacity by 2028 Valuation multiples in line with other listed iron ore producers Still no value attributed to other projects

Orior Capital 9

Source: Orior Capital

Figure 4: Akora valuation model based on DSO scenario

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Shares on issue	millions	72.2	
Options and rights	millions	12.1	
Fully diluted shares	millions	84.3	
Development			
NPV ₁₀ , post-tax	US\$ m	430	Orior Capital estimate
NPV ₁₀ , post-tax	A\$ m	615	
A\$:US\$ fx rate		0.70	
Valuation based on % of NPV			
20%	A\$/share	1.46	
30%	A\$/share	2.19	
40%	A\$/share	2.92	
50%	A\$/share	3.65	
Production			
Capex	US\$ m	222	Orior Capital estimate
Capex	A\$ m	317	
Debt	A\$ m	222	Assume 70% debt
Equity	A\$ m	95	Assume 30% equity
New shares	millions	130	Issued at A\$0.73/share
Total fully diluted shares	millions	214	
Annual EBITDA, 2028	US\$ m	187	Orior Capital estimate
Annual EBITDA, 2028	A\$ m	267	
EV/EBITDA valuations			
3x	A\$/share	2.70	
4x	A\$/share	3.95	
5x	A\$/share	5.20	

Source: Orior Capital

Production valuation of A\$2.70/share to A\$6.44/share

EBITDA earnings are estimated at US\$43m in 2026, US\$92m in 2027 and US\$187m (A\$267m) in 2028, the first full year of operations. The assumption is that the project is financed 70% with debt, and 30% with equity, the new shares being issued at A\$0.73/share, which represents 10% of estimated post-tax NPV $_{10}$ per fully diluted share. On this basis, and valuing the Bekisopa project at 3-6x EV/EBITDA, Akora could be valued at A\$2.70/share to A\$6.44/share. This represents 16x to 38x the current share price.

Assuming the market starts to the factor in full production by say late-2026 (with the project already in production), this would represent an annual return of 100% to 148% over the next four years.

These valuations are sensitive to the price at which Akora issues new shares. If the company funds the equity portion of development by issuing shares at A\$0.36/share (~5% of NPV) it would lower the valuations to A\$1.67/share to A\$3.97/share.

The Bekisopa project should easily support this amount of debt. Assuming borrowings of A\$222m, and borrowings costs of say 12%, annual debt service costs would be ~A\$27m. This represents about 10% of annual full production EBITDA.

Upside scenarios

Two other scenarios are considered. In the **DSO and Fines** scenario, Akora is assumed to produce 2Mtpa of 65% Fe content iron fines for 15 years, commencing in 2036 (year 11 of the project). The DSO and Fines scenario boasts a post-tax NPV_{10} of US\$554m (A\$792m) and an IRR of 37%.

Similarly, in the **DSO** and **Concentrates** scenario, Akora is assumed to produce 2Mtpa of 69.7% Fe content iron fines for 15 years, commencing in 2036. The DSO and Concentrates scenario boasts a post-tax NPV₁₀ of US\$598m (A\$855m) and an IRR of 37%. Realistically, building a concentrate plant hinges on being able to increase production and sales volume, which in turn is dependent upon logistics. Given the limited work concluded by the company to date on the transportation options and costs, the modelling herein has restricted annual product sales to about 2.0Mt.

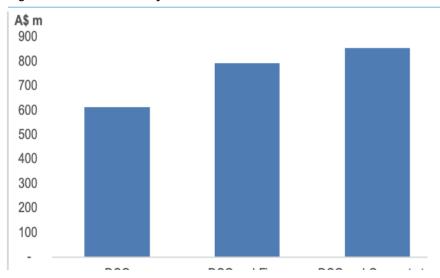


Figure 5: NPV outcomes by scenario

Source: Orior Capital

Taken in the context of Akora's current share price, these valuations may seem high. Yet, there are a number of factors that suggest they could ultimately prove conservative:

- The total material assumed to be mined is 20Mt in the DSO scenario, and 73Mt in the DSO and Concentrates scenario. Realistically, fines or concentrates production would be carried out at a scale well beyond the 2Mtpa envisaged herein.
- The Bekisopa project has an exploration target of 500Mt to 1,000Mt. No value is ascribed to this potential resource upside.
- The financial modelling takes no account of the Satrokala project, which lies 40km southwest of Bekisopa, has a strong magnetic anomaly, appears to be larger than Bekisopa, and which has demonstrated excellent results in rock chip samples that are similar to those attained at Bekisopa.
- It is expected that as the steel industry moves towards decarbonisation, greater price premiums will be paid for high-grade iron products with low impurities. No account is taken of the expected increases in price premiums in the modelling herein.
- No account is taken of the Tratramarina and Ambodilafa projects. Tratramarina is a priority exploration target that hosts a magnetite banded iron formation that grades 35-40% iron.

Why has the opportunity in Akora shares so far been missed by the market?

There are a number of reasons why Akora remains so compellingly cheap:

- Akora listed on the ASX in December 2020, just ahead of a flood of new company listings; there
 have been 150 materials sector IPOs on the ASX since Akora listed making it difficult for investors
 to differentiate between companies, and creating greater than normal competition for capital
- Over the past couple of years other metals such as lithium have attracted greater investor attention
- 'Noise' in the iron ore space, with several companies all claiming to have strong projects, making it difficult for investors to discern real value
- Another ASX-listed iron ore company, Hawsons, announced last month it will postpone its BFS as
 a result of rising capital costs; the market may be tarring all companies with the same brush
- Although Akora has published consistently good drilling and metallurgical testing results, the market may not fully understand how these results translate into potential share price valuations
- Akora's Scoping Study announcement, November 2022, provided no financial information, reflecting disclosure rules on Inferred Resources; investors may not be aware of the financial and operating strengths of the Bekisopa project
- Bekisopa is not fully funded to PFS, let alone into production
- The benefits of higher-grade iron ore projects and their key role in enabling the decarbonisation of the global steel sector are only now gaining greater attention
- Akora shares are tightly held and illiquid; the top 20 shareholders own 56.3% of the company

Peer comparisons

There are a number of iron ore developers listed on the ASX. Akora compares favourably to these companies both financially and geologically. Among a sample of five companies, **Akora boasts the highest NPV to initial capex ratio**, and yet is trading at the lowest EV/NPV.

It can be difficult for investors to compare companies on the basis of their published NPVs, because of the lack of consistency in the key drivers. Companies adopt different selling price assumptions, and different discount rates, both of which are key drivers of valuation. For example, Macarthur Minerals' feasibility study, March 2022, highlighted a post-tax NPV $_6$ of A\$443m. This compares to upfront capital requirements of A\$863m, including pre-stripping costs of A\$62m. Generally, adopting a lower discount rate can increase the NPV. The modelling of Akora presented herein is based on NPV $_{10}$.

https://macarthurminerals.com/wp-content/uploads/2022/11/MMS-MDA-Quarter-End-30-September-2022-FINAL-15.11.22.pdf

Figure 6: EV/NPV

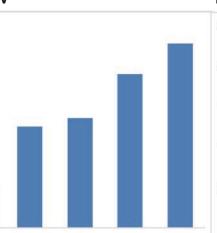
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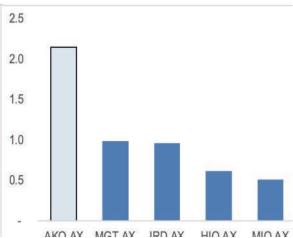
3.0% 2.0%

1.0%



HIOAY

Figure 7: NPV/Initial capex



Source: Company data, Orior Capital

MIOAY

IPD AY

Source: Company data, Orior Capital

Figure 8: NPV

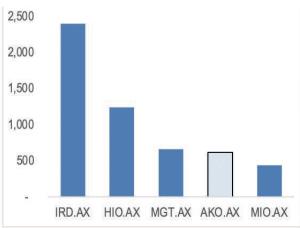
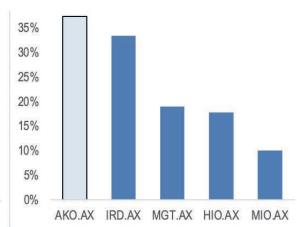


Figure 9: IRR



Source: Company data, Orior Capital

Source: Company data, Orior Capital

Note: Figures 6-9, Akora metrics are based on DSO scenario

Companies looking to invest in or purchase projects will typically require an NPV to initial capex ratio of at least 2x, and sometimes 3x. Akora has an NPV to initial capex of 2.1x in the DSO scenario, and 2.7x in the DSO and Concentrates scenario. Notably the ratios for the other companies in the sample vary from 0.5x to 1.0x. This reflects the relatively high capex costs of the Australian projects which is primarily a function of geology. Relatively low recoveries mean that more tonnes have to be processed, and the need to grind ore to fine particles adds to the processing capacity and cost. These issues are discussed in the following sections.

Two companies in the sample have NPVs that are greater than A\$1.0bn. Both are also associated with very high capital costs. Hawsons is developing the Hawsons Iron project in NSW, Australia. A PFS in 2017 highlighted upfront capex for the proposed 10Mtpa project of US\$1.4bn. This was estimated to have increased to US\$1.6bn earlier this year. In October 2022, Hawsons said it would slow its BFS citing increasing capital costs.

Hawsons https://cdn-api.markitdigital.com/apiman-gateway/ASX/asx-research/1.0/file/2924-02583096-2A1406364?access_token=83ff96335c2d45a094df02a206a39ff4

Iron Road published a Revised DFS in 2019 that outlined a 12Mtpa operation producing 66.7% concentrates with an NPV₁₀ of US\$1.68bn and initial capital costs of US\$1.74bn.

Figure 10: Selected ASX-listed iron ore companies

Company	Study	Comments
Champion Iron CIA.AX	Producer	Champion Iron operates the Bloom Lake mine in Quebec, Canada; it claims to be the largest listed pure-play high-grade iron ore producer globally
Mkt cap: A\$3,129m		Champion produces 66.2% Fe concentrates, and can produce a >67.5% Fe quality product
		Bloom Lake output was 7.9Mt in FY2022
Iron Road	Revised DFS in	Developing the Central Eyre project in South Australia
IRD.AX Mkt cap: A\$108m	February 2019	Optimisation study in 2015 for a 24Mtpa project producing a 67% concentrate with low impurities flagged initial capex of US\$4.6bn
		A Revised DFS, 2019, outlined a 12Mtpa operation for 66.7% concentrate with post-tax NPV ₁₀ of US\$1.68bn and reduced capex of US\$1.74bn
Hawsons Iron	PFS, July 2017	Formerly Carpentaria Resources
HIO.AX		PFS for 10Mtpa project had post-tax NPV ₁₀ of US\$867m, capex US\$1.4bn
Mkt cap: A\$81m		Substantial 400Mt increase in Mineral Resources 2021 led to BFS scope being expanded to 20Mtpa
		Hawsons said, October 2022, it was slowing the BFS citing increased capex
Magnetite Mines	PFS, July 2021	Developing the Razorback project in South Australia
MGT.AX Mkt cap: A\$68m	•	PFS outlined a 3Mtpa operation with post-tax NPV ₈ of A\$660m and IRR of 19%, with initial capex estimated at A\$665m
·	Expansion Study March 2022	Expansion Study based on 7Mtpa highlighted a post-tax NPV ₈ of A\$2,455m and capex of A\$1,985m; management said the DFS will be based on 3Mtpa
Macarthur	Feasibility study,	Developing the Lakes Giles project in Western Australia
MIO.AX Mkt cap: A\$23m	March 2022	FS highlighted a post-tax NPV ₆ of A\$443m, initial capital costs of A\$863m, and an IRR of 10%
Akora Resources AKO.AX	Scoping study November 2022	Developing the Bekisopa project in Madagascar. Also owns Tratramarina and Ambodilafa projects, also in Madagascar
Mkt cap: A\$13m		Excellent potential to fund development of fines or concentrates business with initial DSO operation

Source: Company data, Orior Capital

Although the iron ore sector is substantial with global production of more than 2.5bn tonnes in 2021, it is largely dominated by a few large diversified mining companies. There are relatively few mid-tier independent producers in the sector. A number of companies are privately held.

Metalloinvest is the largest iron ore producer in Russia, producing 41Mt in 2021, and the second largest producer of iron pellets globally. It is wholly owned by USM Holdings. Novolipetsk Steel produced 19.8Mt of iron ore in 2020, representing 18% of the Russian market. Although listed, the company is also the largest steel maker in Russia. Swedish state-owned (and non-listed) Luossavaara-Kiirunavaara Aktiebolag (LKAB) sells iron fines for sinter feed and pellets with grades of more than 70%. The company produced 27Mt of iron products in 2021, representing about 80% of Europe's iron ore production.

Magnetite Mines: https://magnetitemines.com/app/uploads/2022/10/20221017-MGT-Investor-Presentation-FINAL.pdf

https://magnetitemines.com/app/uploads/2022/03/220321_MGT-Confirms-Benefits-of-Expansion-at-Razorback.pdf

Iron Road Revised Development Strategy: https://wcsecure.weblink.com.au/pdf/IRD/02079052.pdf

Listed companies include Champion Iron, Kumba Iron Ore and NMDC Ltd. Champion Iron operates the Bloom Lake mine in Quebec, Canada, producing 7.9Mt of iron concentrates in FY22. Kumba, a subsidiary of Anglo American, operates the Sishen and Kolomela mines in South Africa. Guidance is for combined output of ~38Mt in 2022. NMDC Ltd is an Indian company that mines iron ore, copper and other minerals. The company produces iron pellets and sponge iron. NMDC is the largest iron ore producer in India with output of ~35Mt pa.

Figure 11: Iron ore producer EV/EBITDA valuations

Company	Code	EV/EBITDA				
		2021	2022	2023	2024	2025
Champion Iron	CIA.AX	2.7	4.1	6.1	3.6	3.6
Fortescue Metals Group	FMG.AX	3.1	3.6	5.6	6.4	7.1
Kumba Iron Ore	KIO.JO	3.9	2.0	3.7	3.9	4.6
NMDC Ltd	NMDC.NS	3.4	4.6	4.5	4.4	n.a.
Simple average		3.3	3.6	5.0	4.6	5.1
Simple average, ex FMG		3.3	3.6	4.8	4.0	4.1

Source: Orior Capital estimates

Anglo American Kumba: https://www.angloamericankumba.com/media/press-releases/2022/27-10-2022

The most compelling iron ore project

- Three development scenarios are presented, from a 'base case' 2Mtpa, 10 year DSO operation, to a 25 year project including sales of iron concentrates
- The project is expected to boast relatively low capital and operating costs, attractive margins and high returns
- None of the scenarios take into account potential developments at other projects, nor the more realistic development of larger operations post-DSO

Financial model

Key inputs for the financial model are derived from comparisons with other iron ore projects in Africa and Australia, and on available information on iron ore prices, mining and processing rates, freight rates, fuel costs and others. A number of iron ore companies have published detailed economic studies over the past several years. Companies have also published studies on ilmenite and graphite projects in Madagascar. The assumptions herein draw upon those studies.

The initial operation mining DSO material is expected to be relatively straightforward. The ore is at or near surface. Strip ratios (waste mined to ore mined) should be very low. One uncertainty is in estimating initial capital costs, especially around major cost items such as roads and port infrastructure. Including a 25% contingency is an attempt at conservatism.

Once the DSO operation ends, there is uncertainty over what products (e.g. fines or concentrates) and at what scale the business may continue. The basic premise here was to keep capacity at 2Mtpa. Realistically, if exploration work demonstrates a substantial upgradeable iron ore resource, a future concentrates business would probably be several times this scale.

Within the maiden JORC Resource, H&S Consultants identified 7.8Mt of outcrop and weathered high-grade DSO. This is considered conservative for a number of reasons discussed below. It does not include the undrilled surface outcropping high-grade iron ore. So far, Akora has only drilled about one-third of the 6km strike length at Bekisopa. There is an excellent opportunity to increase this resource with further drilling. Also, no account is taken of the potential for DSO material at Satrokala, which appears to have a similar, though larger, geological signature to Bekisopa.

Despite the highly prospective nature of the deposit, and the excellent drilling and metallurgical results achieved to date, the scenarios modelled herein are not supported by the current resource. **The scenarios are not forecasts.** Rather they plot a potential development path in order to gauge how exploration success might possibly impact valuations over the next few years.

Three scenarios

One of the key geological advantages of the Bekisopa project is that there is an amount of outcropping and high-grade weathered material that is suitable for DSO. DSO refers to the fact that apart from simple mechanical processes such as crushing, screening, and blending, the iron ore is shipped in essentially the same form as that extracted from the ground. This has significant potential advantages in terms of capital and operating costs. It means that Akora could earn substantial cash flow before committing to further processing for either fines or concentrates products. Indeed, in the DSO scenario, cumulative EBITDA earned in the first eight years of operation is estimated at US\$1.3bn. Few other projects have this advantage.

DSO: Based on Akora mining 20.0Mt of DSO material, being the top end of the exploration target for surficial material as set out in the IPO Independent Geologist's Report, over an 11 year period, including ramp-up. Ultimately, production volume will be determined by proven resource volume and logistics.

In the upside scenarios, it is assumed that once the DSO material is exhausted, Akora will continue to produce and sell either iron fines (DSO and Fines) or iron concentrates (DSO and Concentrates). Metallurgical testing has demonstrated the ore at Bekisopa is upgradeable to either high-grade fines or concentrates. According to management, concentrates grading 67.6% Fe are achievable from an ore cut-off grade of 15% Fe, and 69.7% Fe from a cut-off grade of 25-45%, both at 75µm.

DSO and Fines: Once the DSO material is exhausted, the company is assumed to mine and process fresh ore into 2mm dry fines, and to sell 2.0Mtpa of 65% Fe-content iron fines, ramping up from year 11 of the project and ending in year 25.

DSO and Concentrates: It is assumed Akora mines and processes fresh ore into high-grade iron concentrates, selling 2.0Mtpa of 69.7% iron concentrates, also ramping up in year 11, and ending in year 25. Although the current resource includes 75.4Mt of concentrate at a grade of 67.6%, metallurgical testing has returned results as high as 70%, with low impurities.

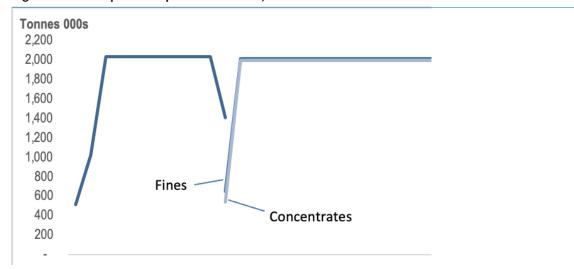


Figure 12: Bekisopa development scenarios, sales volume

Source: Orior Capital

Figure 13: Key assumptions for each scenario

		DSO	DSO and	DSO and
			Fines	Concentrates
Total production, DSO, years 1-11	Mtpa	19.2	19.2	19.2
Total production, Fines, years 11-25	Mtpa		28.9	
Total production, Concentrate, years 11-25	Mtpa			28.5
Annual avg production, DSO, years 3-10	Mtpa	2.1	2.1	2.1
Annual avg production, Fines, years 12-25	Mtpa		2.0	
Annual avg production, Concentrates, years 12-25	Mtpa			2.0
Life of project	Years	11	25	25
DSO mining recovery	%	97%	97%	97%
Fines mining recovery	%		94%	
Fines mass yield	%		65%	
Concentrates mining recovery	%			94%
Concentrate plant recovery	%			89%
Concentrates mass yield	%			54%
Pre-production capital costs	US\$ m	222	222	222
Capital costs, Fines, years 9-10	US\$ m		115	
Capital costs, Concentrates, years 9-10	US\$ m			270
Operating cash costs				
DSO, years 3-10	US\$/t	38	38	38
Fines, years 12-25	US\$/t		67	
Concentrates, years 12-25	US\$/t			81
Selling prices, CFR China				
Benchmark 62% iron ore	US\$/t	109	109	109
Bekisopa DSO	US\$/t	130	130	130
Bekisopa Fines, 65% Fe content	US\$/t		127	
Bekisopa Concentrates, 69.7% Fe content	US\$/t			170
Revenues, life of project	US\$ m	2,500	6,170	7,413
EBITDA, life of project	US\$ m	1,757	3,476	4,324
Average EBITDA margin, life of project	%	70%	56%	58%
Revenues, annual avg, life of project	US\$ m	227	247	297
EBTDA, annual avg, life of project	US\$ m	160	139	173
Cumulative EBITDA, first three years	US\$ m	321	321	321
NPV ₁₀ , pre-tax	US\$ m	571	743	799
NPV ₁₀ , post-tax	US\$ m	430	554	598
NPV ₁₀ , post-tax, at A\$:US\$0.70	A\$ m	615	792	855
IRR, post-tax	%	37%	37%	37%

Source: Orior Capital

Robust financials

The Bekisopa project is expected to generate substantial earnings and high margins. Based on the **DSO scenario** the project boasts:

- Post-tax NPV₁₀ of US\$430m; this represents NPV per share of A\$8.52 (based on A\$:US\$0.7)
- A post-tax IRR of 37%
- Revenues of US\$2.5bn over the project life of 11 years including start-up
- EBITDA of US\$187m in 2028 (first full year), average annual EBITDA of US\$160m, and total EBITDA in the first 3 years of operations (including start-up) of US\$321m
- EBITDA margins of 70% over the life of the project
- Very low operating cash costs of US\$38/t
- Low upfront capital costs, estimated herein at US\$222m, representing US\$11/t of DSO sold over the project life

The **DSO and Concentrates scenario** boasts:

- Post-tax NPV₁₀ of US\$598m; this represents NPV per share of A\$11.84
- A post-tax IRR of 37%
- Revenues of US\$7.4bn over the project life of 25 years (10 years DSO and 15 years concentrates)
- Average annual EBITDA of US\$173m
- Average EBITDA margins of 58% over the life of the project
- Average cash operating costs for the concentrates production of US\$81/t

Capital costs

DSO

Capital costs for the initial DSO operation are estimated at US\$222m. Of this amount, US\$40m represents mining and DSO preparation including shovels, crushing and screening equipment, fuel dump and workshops. A further US\$20m is for accommodation, utilities and tailings.

Road costs are estimated at US\$35m. The company plans to build a new road from Bekisopa to Satrokala, estimated at 50-55km. Management indicates that 3 or 4 larger villages along route may have to be bypassed, for which a further 15km is factored in. Road costs are estimated at US\$500,000/km, though other ASX-listed companies operating in Madagascar have been quoted as low as US\$300,000/km by local contractors. It is assumed that any road upgrading necessary along route will be paid for by the government and likely sponsored by the World Bank. The World Bank has a committed road improvement program in Madagascar, stating in April 2022 that its "roads and transport portfolio in Madagascar now stands at US\$740m".

World Bank: https://www.worldbank.org/en/news/press-release/2022/04/19/world-bank-commits-to-strengthening-madagascar-s-post-cyclone-recovery-plan-pandemic-response-and-energy-and-transport-s

Figure 14: DSO scenario capital cost estimate

10
12

Source: Orior Capital

At this stage, management is considering different options for export infrastructure. While Toliara is an established port, it is mainly used for the import of containers. According to the digital Logistics Capacity Assessment (https://dlca.logcluster.org) the port at Toliara has two existing docks, is suitable for bulk handling and other activities, and has roll-on, roll-off facilities for side vessels and quarter-ramp vessels. The two existing docks can receive vessels with drafts of up to 7.50m. Supramax vessels (48,000 to 60,000 dwt), which seem a likely option, typically have drafts of around 12m.

The assumption herein is that Akora stockpiles product outside of Toliara town and conveys it to a dedicated ship loading facility using an open pile pier construction. This is similar to Base Resources' plans for its Toliara ilmenite project. It would necessitate buying land, the conveyor and a ship loading facility. Base Resources' definitive feasibility study, DFS2, released in September 2021, included an upfront capex cost of US\$82m for product storage and loading facilities. It is understood that some three-quarters of this relates to loading. On this basis, port costs for the Bekisopa project are estimated at US\$60m. This includes land acquisition for storage, and the loading facility.

Figure 15: Port of Toliara



Source: https://dlca.logcluster.org

Base Resources DFS2: https://wcsecure.weblink.com.au/pdf/BSE/02426235.pdf

The capex cost for haulage trucks is based on a calculation of how many trucks will be required. Given the present variable quality of some roads in Madagascar, and after discussions with management, the assumptions are based on relatively light 40 tonne trucks, travelling at relatively slow average speeds of 45km/hour, operating 350 days pa, with 85% truck availability, over a haul distance of 344km.

Figure 16: Estimate of haulage trucks capex

Product tonnes per annum	000s tonnes	2,037	Haul distance, mine to port	km	344
Truck capacity	Tonnes	40	Average truck speed	km/h	45
Truck trips per annum		50,925	Journey time	Hours	7.6
Operating days per annum		350	Loading, unloading, driver rest	Hours	2.0
Truck trips per day		146	Total return journey	Hours	17.3
Cycles per truck per day		1.39	Cycles per truck per day		1.39
Trucks required		105			
Assumed truck availability		85%			
Trucks required		124			
Truck, unit cost	US\$	100,000	_		
Haulage capex	US\$ m	12.4			

Source: Orior Capital

A contingency of US\$44m (25%) is included in the capex estimate, this conservatism reflecting the early stage nature of the project.

Fines

The fines plant will require further crushing and screening to achieve a 2mm particle size. Capex for this 2Mtpa operation is estimated at US\$116m, representing a cost of US\$58 per tonne of annual capacity. No additional road or port infrastructure will be required.

Concentrates

The concentrates plant will require further grinding to achieve a 75µm grain size, and high intensity magnetic separation facilities, as indicated by Akora's DTT results. Initial capital costs for projects in Australia typically range from US\$150 to US\$190 per tonne of annual production capacity. Magnetite Mines' July 2021 PFS for its Razorback project highlighted upfront capex of A\$665m for a 3Mtpa capacity. This is ~US\$155 per tonne of annual capacity at a long run exchange rate of A\$:US\$0.70.

According to Macarthur Mineral's March 2022 Feasibility Study, the Lake Giles project is expected to cost US\$569m for a 3.0Mtpa project, representing a cost of US\$190 per tonne annual capacity.

The assumption in the DSO and Concentrates scenario is for concentrate plant capex of US\$270m, representing a capex per tonne of annual capacity of US\$135. This is lower than equivalent projects in Australia. This is justified by the relatively high recoveries as highlighted by DTT results, the relatively coarse grain size at which DR-grade products can be achieved, and the fact that road and port infrastructure will already be in place. It is assumed these funds are deployed in Years 9 and 10 of the project, before the concentrate plant starts up in Year 11.

Macarthur Minerals Feasibility Study: https://macarthurminerals.com/wp-content/uploads/2022/03/MMS-NR-FS-Results_TSXV-21-March-2022-FINAL.pdf

Operating assumptions

Timing

The model is based on the assumption that a PFS for the DSO operation will be completed by 2H23 as per management's target, and a DFS by 2H24. If a final investment decision is made by mid-2025, the project could start-up in 2H26. For the DSO operation, mining and processing will absorb relatively little capital. The road and port facilities are likely to be the main factors affecting timetable.

Production

The DSO base case is modelled on the assumption that Akora mines 20Mt of DSO material over an 11-year period, commencing in 2026, and ramping up to full production by 2028. Operations are assumed to end in 2036. Ore mined is estimated at 2.1Mtpa, and production at 2.0 Mtpa in years 3-10 after a mining recovery of 97%. A strip ratio of 0.24:1 waste-to-ore is modelled based on management's expectations.

In the 'DSO and Fines' and 'DSO and Concentrates' scenarios, fines or concentrates production is assumed to commence in 2036, and to run for 15 years to 2050.

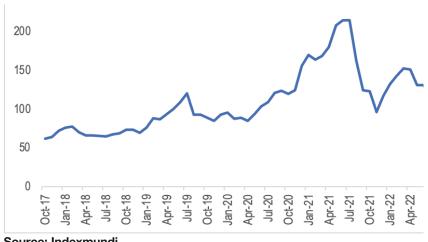
In DSO and Fines, Akora is assumed to mine 3.1Mtpa of ore, at a strip ratio of 5.0 for the first five years and 3.0 thereafter, with a mining recovery of 94% (which management thinks conservative), and an average ore grade of 45%. Fines production is estimated at 2.0Mtpa of 65.1% iron fines.

In DSO and Concentrates, the company is assumed to mine 3.75Mtpa of ore, to produce 2.0Mtpa iron concentrates at an average grade of 69.7%, assuming a concentrate processing yield of 89%.

Selling prices

Over the past five years, the average iron ore spot price, for benchmark 62% Fe-content material, CFR China, was US\$109/t. The price for 65% Fe-content material was US\$127/t, representing a premium of US\$18/t or about US\$6/t per 1% of grade improvement. Further, lump material has typically attracted a premium of ~US\$18/t over fines. The assumption herein is that Akora's 64% Fe-content DSO material will attract a selling price of US\$130/t, being the historical benchmark price plus a US\$12/t premium for grade, and a US\$9/t premium for the 50% lump content.

Figure 17: Iron ore price, spot CFR China, 62% Fe content



Source: Indexmundi

The second product is a high-grade 2mm fines boasting ~65% Fe-content that is expected to command a price of US\$127/t. The third is a very high-grade concentrate of 69.7% Fe-content that is assumed to attract a price of US\$170/t.

Low operating costs

The DSO project is expected to benefit from very low operating costs. This reflects the significant geological advantages of the high-grade, near surface material being mined. In the DSO scenario, cash operating costs are estimated at US\$38/t. As in most bulk materials businesses, transportation and logistics costs are expected to be a significant component of operating costs.

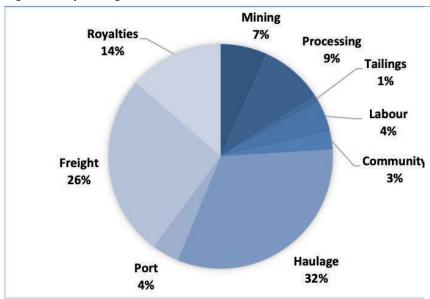


Figure 18: Operating cash costs

Source: Orior Capital

Royalties

Royalties are assumed to be 4% of revenues and deductible for corporation tax.

Haulage costs

Haulage costs are based on tonnes hauled (sales volume) with 40 tonne trucks, 344km to port, a fuel efficiency of 2km/litre and current Malagasy diesel fuel prices of US\$1.137/litre (www.globalpetrolprices.com). Truck maintenance costs are assumed to be US\$25,000 per truck pa.

Freight costs

Iron ore prices are generally quoted CIF China, which includes the cost of freight and insurance. The free-on-board (FOB) price received by the iron ore seller is net of freight costs. Freight rates are highly volatile. Pacific Basin Shipping Ltd is one of the world's largest owners and operators of modern Handymax and Supramax dry bulk ships. According to Pacific Basin, spot rates of Supramax 58,000 dwt vessels varied between about US\$4,000/day to US\$12,000/day in 2016-2020. In 2021, the dry bulk freight market saw a strong uptrend in prices until October, and by far the highest annual average freight rates for Handysize and Supramax ships since 2008. Since then prices have corrected. In October 2022, rates for Supramax vessels were about US\$18,000/day. The modelling herein is based on a long-run rate of US\$15,000/day, higher than market rates in 2016-2020, though lower than current spot prices.

The shipping distance from Toliara, Madagascar to Qingdao, China is about 8,000 nm (ports.com). Assuming a shipping speed of 11 knots, and allowing another 5 days for loading and unloading, the total shipping time could be about 35 days. On this basis, shipping could cost ~US\$10/t of product.

Handysize Market Spot Rates (BHSI) Supramax Market Spot Rates (BSI) 58k dwt 38k dwt (tonnage adjusted) US\$/day net* 40,000 40,000 35,000 35,000 30,000 30,000 25,000 25,000 11 October 2022 20,000 20,000 October 2022 \$17,910 15,000 15,000 10.000 10.000 5,000 5.000 Feb Mar Apr May Jun Aug Sep Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2021 --- 2020 2022

Figure 19: Handysize and Supramax spot rates

Source: Pacific Basin Shipping, 3Q22 Trading Update

It seems highly likely that the ultimate market for Akora's products will be in India and the Middle East. Shipping distances to these markets would be less than half the distance to China, and on the same assumptions, shipping costs could fall to about US\$5/t.

The Indian steel market is both large, and transitioning towards higher value-added products as the country seeks to reduce its reliance on imports. In 2021, Indian crude steel consumption was 118Mt, representing about 6% of world demand. India's National Steel Policy, released in 2017, aims to boost production capacity to 300Mt by 2030. In its September 2022 presentation, ArcelorMittal described India as the "Next Frontier of Accelerated Growth". The Group is expanding the capacity of its Hazira plant in Gujarat from 7.6Mtpa now to 15Mtpa, with longer-term ambitions to reach capacity of 30Mtpa.

Pacific Basin Trading Update:

https://ar2021.pacificbasin.com/reports/pacificbasin/annual/2021/gb/English/40/the-year-in-review.html

https://www.pacificbasin.com/upload/en/ir/financial_disclosure/presentations/result/Pacific%20Basin%203Q22%20Quarterly%20Trading%20Update%20-%20Final.pdf

Note: One knot is equivalent one nautical mile per hour

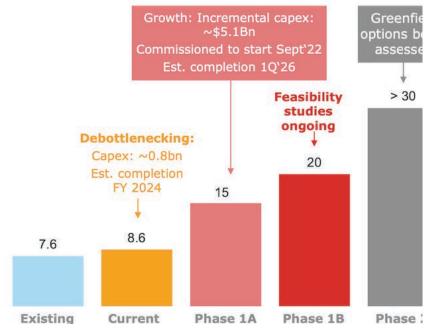


Figure 20: ArcelorMittal Nippon Steel India, phased growth plans

Source: ArcelorMittal Nippon Steel India, September 2022

In September 2022, Essar Group said it would invest US\$4bn in a new integrated flat steel works in Saudi Arabia that is expected to come on stream in 2025. The plant will have two DRI plants, each with capacity of 2.5Mtpa capacity.

ArcelorMittal Nippon Steel India presentation:

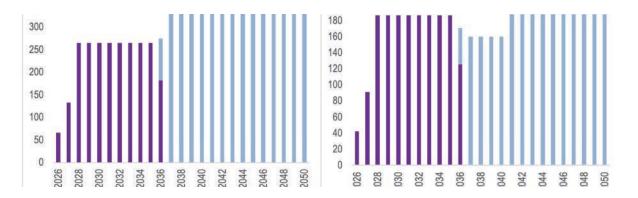
https://corporate.arcelormittal.com/media/2clgp1oj/amns-investor-presentation.pdf

https://economictimes.indiatimes.com/industry/indl-goods/svs/steel/essar-to-invest-usd-4-bn-in-steel-plant-in-saudi-arabia/articleshow/94327800.cms

DSO and Concentrates scenario

Figure 21: Revenues

Figure 22: EBITDA



Source: Orior Capital

Source: Orior Capital

Figure 23: Ore mined

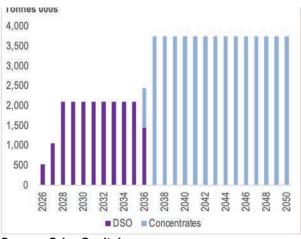
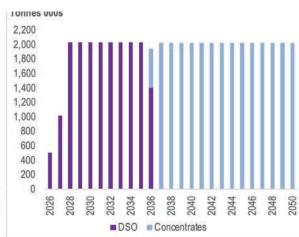


Figure 24: Sales volume



Source: Orior Capital

Source: Orior Capital

Figure 25: EBITDA margin

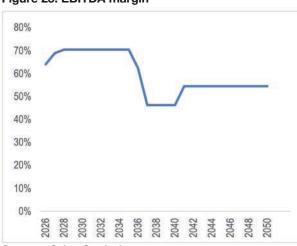
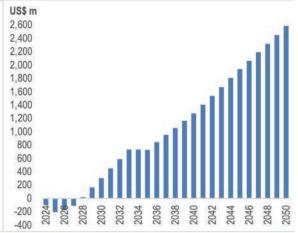


Figure 26: Cumulative free cash flow



Source: Orior Capital

Sensitivity analysis

The **DSO scenario** estimated NPV is sensitive to a number of key inputs including selling prices, capital costs and operating expenses.

- Reducing the assumed selling price by 10% from US\$130/t to US\$117/t would reduce the estimated post-tax NPV₁₀ by 21% from US\$430m to US\$341m, and cut the IRR from 37% to 33%
- Increasing operating costs by 10% throughout the project lifetime would reduce the NPV by 6% to US\$403m, and the IRR to 36%
- Increasing the capital costs of the project by 10% would reduce the NPV by 6% to US\$406m.

Next steps

Discussions with management indicate the focus over the next 12 months or so will be on delivering a PFS. This will be focused on the DSO material, and potentially will include either some fines or concentrates production depending on how much of the resource is in the Measured category. Management is targeting a PFS by late-2023.

Sample preparation and assaying for the Southern Zone in-fill drilling program is expected to be completed by early-2023. To what extent the company can also conduct in-fill drilling programs at the Northern and Central Zones will depend mostly on funding.

Delivering the PFS will require a number of work streams to be completed concurrently next year. An updated Mineral Resource Estimate will be prepared using the in-fill drilling assays. A number of other studies including pit optimisation, geotechnical, hydrological, and weather cycle mapping will also need to be completed. The company plans to undertake further crushing and screening trials aimed at better defining the metallurgical processing circuit for the DSO material. Plans for the road from Bekisopa to Satrokala will continue to be evaluated. Akora will also continue to study port and shipping options, including evaluating the suitability and cost of the existing port facilities, and the options around a conveyer system.

Environmental and community work will continue, including the preparation of an Environmental and Social Impact Assessment (ESIA).

Bekisopa's natural advantages

- Bekisopa hosts an extensive, high-grade iron ore deposit that is near-surface, has good metallurgy, and is under-explored
- Drilling and magnetic survey results suggest scope to outline a substantial asset; the exploration target is 500Mt to 1,000Mt at 30-60% Fe
- Metallurgical testing highlights the potential for Bekisopa iron products to supply a decarbonising steel industry with high-grade, low impurity DRI pellet feed

The mineralisation at Bekisopa has a number of significant geological advantages. The deposit hosts a large iron ore body with a strike length of at least 6km and depths in some parts down to 500m. The exploration target is 500Mt to 1,000Mt at an Fe grade of 30-60%. There is a meaningful quantity of high-grade weathered material that is suitable for DSO operations. Ore recoveries, as measured by Davis Tube Tests, are higher than at most Australian deposits. Concentrates with grades suitable for DRI pellet feedstock can be achieved at relatively coarse sizes. Impurity levels are low. It is important in DRI-EAF operations to limit impurities. Taken together, these factors result in relatively low capital and operating costs.

Maiden Resource

Akora announced maiden Inferred Resources for the Northern and Central Zones in March 2022, and for the Southern Zone in April 2022. The combined resource stands at 194.7Mt at a head grade of 32% Fe, for 75.4Mt of iron concentrate at a grade of 67.6% Fe. This Mineral Resource was achieved within just 16 months of being listed on the ASX. It derives from drilling just 2km of the known 6km strike length, and to a depth of only 100m.

Figure 27: Bekisopa Maiden JORC Inferred Resource

Location	Inferred Re	Inferred Resource		Concentrat	е
	Tonnes	Head grade	Recovery	Tonnes	Grade
	Mt	% Fe	%	Mt	% Fe
Southern	110.2	32.0	37.8	42	67.6
Central	41.2	30.0	36.3	15	67.0
Northern	43.3	33.3	43.3	19	68.2
Total, Inferred	194.7	32.0	38.7	75.4	67.6

Source: Akora

Notably, the resource is modelled on 5m blocks. It is assumed that remodelling the resource on 2m blocks, considered appropriate for the type of mineralisation, would enable material excluded from the resource as a result of grade averaging to be included. Also, density appears to have been estimated without reference to the domains. Whereas the Wardell Armstrong exploration target included in the Independent Geologist's Report for the IPO used a specific gravity of 4.0, the Inferred Resource is based on a density of 3.22 tonnes/m³. It would seem likely that assigning higher densities to the iron-bearing domains, would lead to a greater tonnage being included in the resource.

Further, the current resource does not include surface material that was not captured in the drilling results. Broadly, this could amount to say 2.3Mt, based on a strike length of 6km, an average width of 200m, an average depth of 0.5m, and density of say 3.8 t/m³. This is not an exact science; there is less outcropping material in the Central Zone, though in the Southern Zone it extends across as much as 1,000m in some areas. In some areas the outcrops are substantial, and in others there are many fractured high grade lumps. Overall, the current resource seems conservative.

High Fe grades, low impurities

The maiden resource contains 75Mt of concentrate at a high grade of 67.6% Fe content and with low impurities. This is essential. As the global steel industry looks to decarbonise through the greater use of electric arc furnaces the industry will require higher grade feedstocks with lower impurities. Ideal grade for DRI pellet feed is 67% or better Fe content with combined SiO_2 and Al_2O_3 content of less than 3.0%, and preferably less than 2%.

Figure 28: Bekisopa Maiden Resource DTR Concentrate grades

	% Fe	% SiO₂	% Al ₂ O ₃	% P	% S	% TiO₂	% LOI
Southern	67.6	1.8	0.6	0.011	0.285	0.17	-2.00
Central	67.0	2.3	0.6	0.005	0.330	0.19	-1.93
Northern	68.2	1.3	0.7	0.005	0.028	0.20	-2.63
Average	67.6	1.8	0.6	0.008	0.237	0.18	-2.13

Source: Akora

Based on the existing resource, Bekisopa has combined acidic gangue elements, SiO_2 and Al_2O_3 , of 2.4%. Davis Tube Tests conducted on drill holes BEKD01, BEKD04, BEKD10 and BEKD34 returned results ranging from 0.55% to 1.9%. On this basis, Bekisopa compares very favourably. Australian projects typically have combined SiO_2 and Al_2O_3 contents of 2.8% (Hawsons) to 6.8% (Macarthur Minerals).

Bekisopa has also returned superior Davis Tube Recovery (DTR) results. DTR measures how much of the material being tested ends up in the final product. Higher DTR results mean less material has to be processed to produce one tonne of product. At Bekisopa, the resource has a DTR of 38.7%. This means 2.6 tonnes of material have to be processed to achieve one tonne of product.

Other projects typically have DTRs of around 15%. At Iron Road, the plan is to process the ore through two stages, with the first stage eliminating 60% of the mass at 3mm size, and the remaining 40% being further processed to a 66.7% concentrate. An Independent Technical Review conducted in 2021, estimated this second stage would have an iron recovery of 37% for an implied net DTR of 15% ($40\% \times 37\%$).

Hawsons: https://cdn-api.markitdigital.com/apiman-gateway/ASX/asx-research/1.0/file/2995-01877847-2A1026222?access_token=83ff96335c2d45a094df02a206a39ff4

Macarthur Minerals: https://macarthurminerals.com/wp-content/uploads/2022/04/MMS-Corporate-Presentation-March-2022-1.pdf

Iron Road Technical Review: https://wcsecure.weblink.com.au/pdf/IRD/02376166.pdf

https://www.ironroadlimited.com.au/images/files/presentations/20220505__CEIP_Field_Visit_Email.pdf

Another important factor is the grind size. The more grinding required to enable magnetic separation of the iron, the higher operating costs will be. In Western Australia, grind sizes are typically 10µm to 38µm because of the necessity to fine grind to liberate magnetite grains, according to Iron Road. At Bekisopa, high-grade concentrates with low impurities can be achieved by grinding to a relatively coarse 75µm. This results in smaller crushing and grinding circuits and lower capital and operating costs.

Figure 29: Concentrate grade

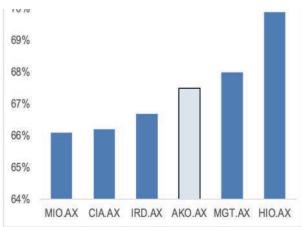
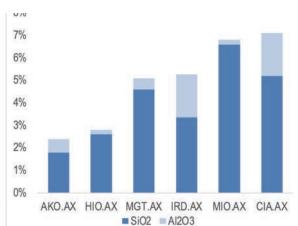


Figure 30: Impurities, silica oxide and alumina



Source: Company data, Orior Capital

Source: Company data, Orior Capital

Figure 31: Feed tonnes for 1t product, DTR %

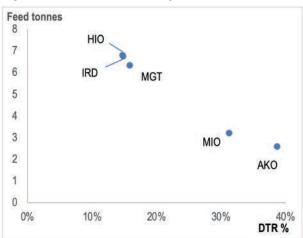
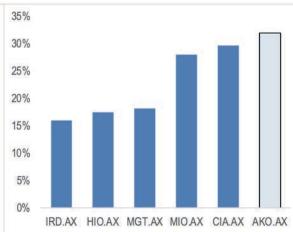


Figure 32: Resource grade



Source: Company data, Orior Capital

Source: Company data, Orior Capital

Exploration targets point to massive scale potential

At the time of the IPO, Wardell Armstrong (WAI) put forward three exploration targets. These were based on the surficial material, the high-grade mineralisation to a depth of 100m, and the overall deposit to a depth of 500m. According to WAI, the Bekisopa prospect has an exploration target of 10-20Mt at a grade of 50-65% Fe, to a depth of around 10m, and a target of 50-100Mt at similar grades can be interpreted to a depth of 100m.

Ground magnetic surveying completed in 2019 demonstrated magnetite mineralisation continues at depth, with geophysical modelling suggesting depths of at least 500m in some places, according to WAI. It is unclear whether the plus-60% material continues at depth, but primary textures in the surficial mineralisation are promising. Even at lower grades, and assuming some of the magnetic signature results from interbedded magnetite bearing amphibolites and calc-silicates, there appears to be excellent potential for a large deposit of 500-1,000Mt of readily upgradable mineralisation grading 30-60% Fe.

Management's current focus is on demonstrating a sufficiently large DSO resource that could support an operation of several years to enable the generation of significant cashflows. Beyond that, the Bekisopa project appears to have excellent potential to become a multi-decade mine.

Figure 33: Wardell Armstrong Bekisopa exploration targets

	Low range	High range
Target 1: Surficial material		
Length (m)	5,000	5,000
Width (m)	200	200
Depth (m)	2.5	5.0
Specific gravity	4.0	4.0
Tonnage, Mt	10	20
Grade range, % Fe	50-65	50-65
Target 2: High-grade mineralisation	to 100m depth	
Length (m)	5,000	5,000
Width (m)	50	50
Depth (m)	50	100
Specific gravity	4.0	4.0
Tonnage, Mt	50	100
Grade range, % Fe	50-65	50-65
Target 3: High-grade plus intervening	g disseminated min	eralisation
Length (m)	5,000	5,000
Width (m)	50	100
Depth (m)	500	500
Specific gravity	4.0	4.0
Tonnage, Mt	500	1,000
Grade range, % Fe	30-60	30-60

Source: Wardell Armstrong International, Independent Geologists Report, November 2020

Bigger regional opportunity

So far, management has focused its attention on Bekisopa. Bekisopa is an excellent prospect; the financial modelling herein, based on only a small proportion of the potential overall asset, suggests it is highly valuable. Yet Bekisopa is only part of a broader regional portfolio.

The Bekisopa southwest tenements are situated at Satrokala, which lies about 40km to the southwest of Bekisopa and on a known magnetic anomaly that suggests a strike length of about 10km. Akora's initial rock chip sampling demonstrated strong results with two-thirds of the samples (66 rock samples out of 102) returning an average grade of 64.5% Fe. Initial work suggests Satrokala has a similar geological signature to Bekisopa. It has a strike length of about 10km and looks to be a consistent 1.2km wide. Management believes Satrokala has potential to host mineralisation suitable for DSO. Satrokala also has the advantage of being about 40km closer to Toliara port.

In addition to Bekisopa and Satrokala, Akora also owns the exploration licence area PR 26532. Historical magnetic surveys of the area have demonstrated iron occurrences and substantial magnetic anomalies. Three of these anomalies, known as BEK_A5, BEK_B1 and BEK_C, have similar magnetic signatures to Bekisopa but have not been sampled or drilled yet.

Broadly speaking, the magnetic anomalies suggest a total strike length, including Bekisopa and Satrokala, of approximately 40km. So far, Akora has only drilled about 2km.

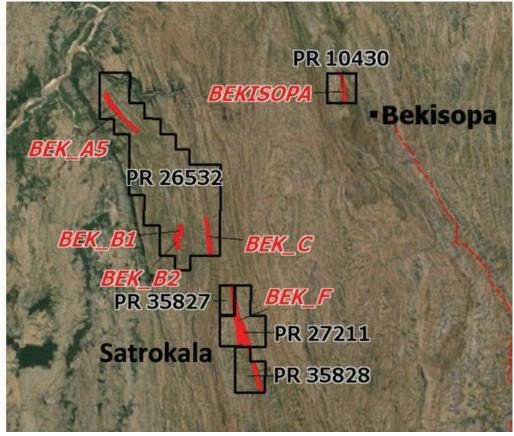


Figure 34: Bekisopa and Satrokala regional area

Source: Akora

There seems to be an excellent opportunity to explore and potentially develop a more regional asset portfolio.

Summary of drill results

In 2020-2021, Akora drilled 63 drillholes for a total of 6,215m, and took 3,930 rock samples, across the Bekisopa deposit. Drilling demonstrated that Bekisopa hosts both high-grade surficial, weathered material that is suitable for DSO, as well as substantial iron mineralisation at depth. So far, the company has only drilled about one-third of the 6km strike length. Mineralisation remains open both along and across strike, as well as down dip. In particular, significant magnetic anomalies, including to the north of the Northern Zone drilling, between the Northern and Central Zones, between the Central and Southern Zones, and in the far southern areas, remain to be drilled. **There appears to be excellent scope to further increase resources.**

Southern Zone

Management has focused most of its attention on the relatively flat lying, near-surface Southern Zone, where there is potential to achieve a substantial high-grade resource comprising both DSO material and readily upgradeable mineralisation. Akora drilled 37 drillholes (out of 63) in the Southern Zone in the 2020 and 2021 drilling programs, and has recently concluded the 2022 Southern Zone In-fill Program (a further 85 drillholes), for which assay results are expected in early 2023.

The Southern Zone measures some 1.5km north to south, and is about 700m across strike. Mineralisation has been intersected over a strike length of 1,000m, and given the magnetic anomaly, seems likely to extend over the entire 1.5km length of the zone. Drilling to date has demonstrated the zone varies in thickness from 40m to 163m (in BEKD46). There are multiple outcrops; 12 drillholes intersected mineralisation from surface to as much as 14m downhole, returning grades of 61% Fe to 68% Fe. These iron ore grades are DSO equivalent. Key results include:

BEKD13: From surface to 14.6m, at 64.9% Fe

BEKD31: From surface to 8.91m, at 68.2% Fe

BEKD44: From surface to 5.9m, at 63.9% Fe

Several drillholes have also recorded meaningful mineralisation at depth:

BEKD45: 11.0m, from 56.8m to 67.8m, at 64.0% Fe

BEKD56: 7.5m, from 22.8m to 30.3m, at 64.9% Fe

In addition, Akora has drilled 9 deeper drillholes in the Southern Zone, varying in depth from 139.6m to 208.8m. Three of these drillholes achieved intersects of 150-160m and at grades of more than 30% Fe including:

BEKD46: 162.8m, from 16.1m to 178.9m, at 35.9% Fe

BEKD43: 149.6m, from 35.8m to 185.4m, at 37.6% Fe

BEKD59: 150.8m, from 23.1m to 173.9m, at 33.2% Fe

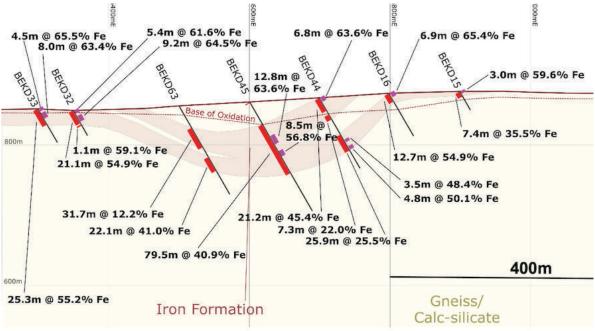
Drill spacing was typically 150m by 50m in the Southern Zone, where Akora drilled most drillholes. It was 200m by 50m in the Central Zone, and 200m by 100m in the Northern Zone.

6.1m @ 1.4m @ 9.4m @ 60.4% Fe 60.7% Fe 63.9% Fe 5.0m @ 28.3% Fe 46.3m @ 82.7m @ Iron Formation 43.6m @ 44.7% Fe 27.9m @ 34.1% Fe 86.7m @ 31.8% Fe 21.2% Fe 43.4m @ 42.8% Fe 118.5m @ 19.6% Fe 45.7m @ 114.7m 8.2m @ 52.0% Fe 40.7% Fe 29.6% Fe 14.4m @ 38.1% Fe 8.8m @ 36.9% Fe 10.1m @ 10.6m @ 59.8% Fe

Figure 35: Bekisopa Southern Zone section 7,608,450N

Source: Akora

Figure 36: Bekisopa Southern Zone section 7,608,000N



Source: Akora

Central Zone

The Central Zone covers a strike length of some 1.8 km north to south, and is about 300m across strike. Mineralisation is continuous in the northern part of the zone, over about 500m. Given the continuous magnetic anomaly and the mineralisation intersected in the more southern part of the zone, it seems likely that mineralisation will be continuous over the entire strike length.

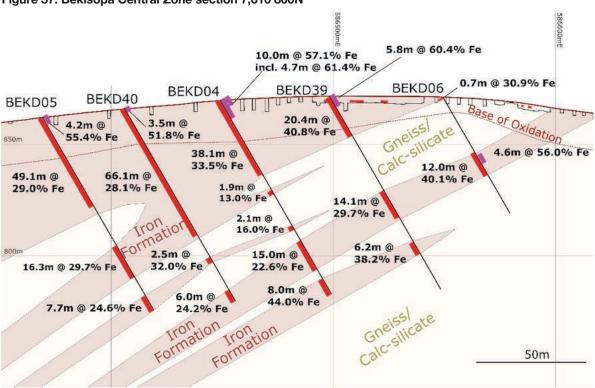
Mineralisation is between 50m and 70m true width. The deposit dips shallowly at between 30° and 40° to the west. The dip is interpreted to be a shallower 10° to 15° in the south, though more drilling is required to confirm this. The cross sections highlight the relatively flat lying formation of the deposit which appears suitable for a low stripping ratio, open-pit mining operation.

Mineralisation remains open both along and across strike. In particular, there appears to be potential

for additional iron mineralisation at depth and to the west of the drilling conducted to date.

Akora has drilled 12 drill holes into the Central Zone, four of which ended in mineralisation. Drill holes BEKD04 and BEKD05 both ended in mineralisation at 100.4m downhole.

Figure 37: Bekisopa Central Zone section 7,610 800N



Source: Akora

Northern Zone

The Northern Zone measures some 1.5km north to south, and is about 200m across strike. Drilling to date has demonstrated the zone extends to a depth of more than 300m down dip from surface, with a vertical depth of more than 270m and a true thickness of 50m to 106m. Mineralisation dips at about 50-60° to the west. As in the Southern and Central Zones, a number of drillholes have intersected high-grade outcrops, including:

BEKD01: From surface to 6.9 metres at 64.7% Fe

BEKD19: From surface to 4.6 metres at 63.9% Fe

BEKD24: From surface to 3.9 metres at 63.7% Fe

Drilling has also intersected mineralisation at depth:

BEKD51: 67m from 136m to 203m at 30.3% Fe

BEKD53: 105m from 144m to 249m at 31.3% Fe

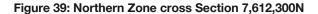
Key drill intercepts are shown in Appendix 2.

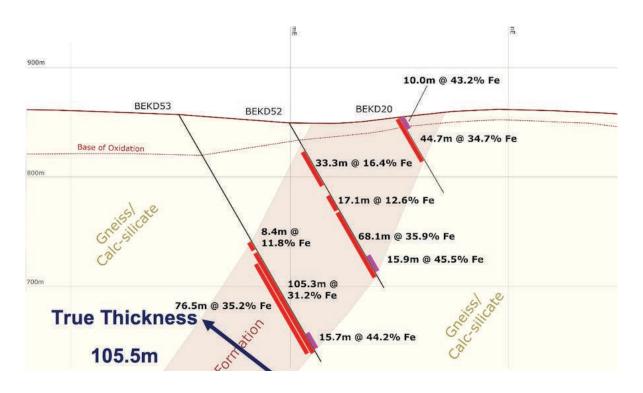
6.9m @ 64.7% Fe 4.6m @ 63.9% Fe BEKD01 (50m off section) 900m BEKD19 35.3m @ 42.6% Fe BEKD50 BEKD51 70.5m @ 44.1% Fe Base of Oxidation 31.9m @ 41.7% Fe 11.1m @ 12.1% Fe 76.3m @ 36.2% Fe 5.5m @ 50.0% Fe 28.9m @ 39.4% Fe 67.4m @ 30.3% Fe **True Thickness** 100m

~67.4m

Figure 38: Northern Zone cross section 7,612,100N

Source: Akora





Source: Akora

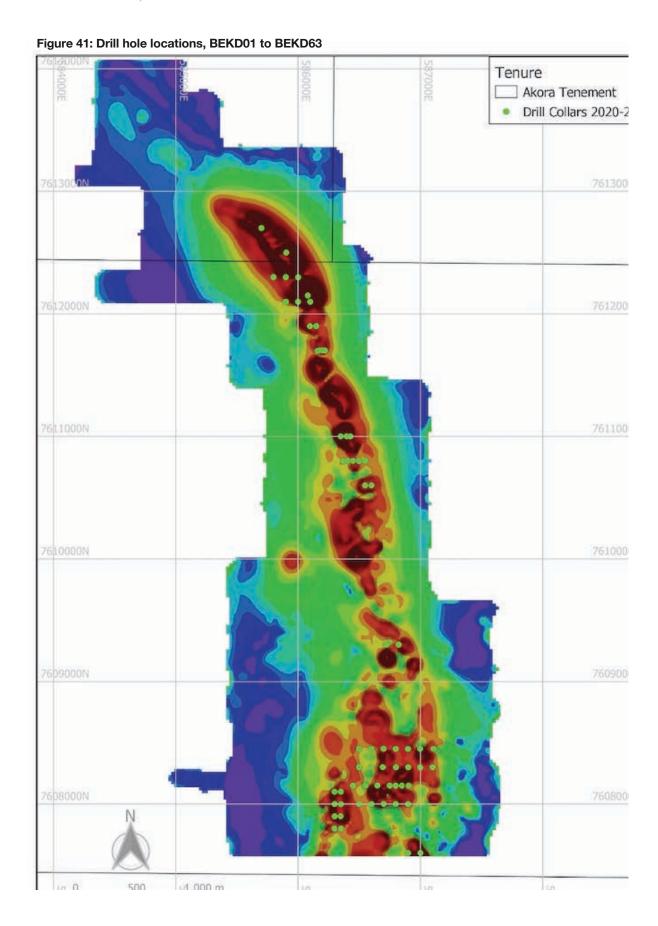
Southern Zone in-fill drilling program, 2022

In October 2022, Akora completed an in-fill drilling program at the Southern Zone comprising 85 shallow drill holes for a total of 1,165m, an average of 13.7m per hole. Iron mineralisation was encountered in every hole, with intercepts generally thicker than expected. Hole depths ranged from 5.6m to 29.6m. Drilling was conducted on a 50m by 50m grid, with the intention of improving confidence in the resource. Drill hole location was determined with reference to the DSO assays from the 2020-2021 drilling, and additional near surface targets to the eastern and western areas where previous drilling identified high grades. Assays are expected to be released in early 2023.

Patrolis help-grade Discoutine

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Figure 40: The in-fill drilling grid on the eastern and western areas of the Southern Zone



Positive metallurgical results

In 1H22, Akora conducted metallurgical tests on samples from drill holes BEKD01 (Northern Zone), BEKD04 (Central Zone), BEKD10 (eastern side of Southern Zone) and BEKD34 (western side of Southern Zone). Wet Low Intensity Magnetic Separation (wLIMS) tests were performed on material crushed to <2mm. Davis Tube Tests were conducted on material crushed to 75µm. The tests were undertaken on continuous drill core composites and intervals from surface to varying depths downhole.

The results were consistently excellent across all drill holes. The DTT tests returned Fe grades as high as 70% and with low impurities. The results demonstrate that **iron mineralisation at Bekisopa** is readily upgradable and that Bekisopa has potential to become a long-term producer of premium grade iron concentrates suitable for DRI pellet production.

The Davis Tube Test results are of particular note. Samples from all four drill holes were upgraded to between 68.3% and 71.1% Fe, with an average across each hole of 70%. Critically, combined silica oxide and alumina content ranged from just 0.55% in BEKD04 to 1.9% in BEKD10. Average phosphorus grades ranged from 0.003% in BEKD01 to 0.007% in BEKD10.

These superb high grade, ultra-low impurity results represent ideal material for DRI pellet feedstock.

Davis Tube Test (DTT) is a laboratory instrument designed to separate magnetic ores into strongly magnetic and weakly magnetic fractions. It has become a standard laboratory test used for the assessment of the upgradeability of magnetic ores by magnetic separation techniques. In wet Low Intensity Magnetic Separation (wLIMS) tests, magnetic ores are suspended in a slurry and are separated from non-magnetic material by being passed through a rotating magnetic drum. The idea of the tests is to gain an understanding of how easy the iron mineralisation can be upgraded, which can feed into the feasibility of developing a larger mining operation producing iron concentrate.

Figure 42: wLIMS and DTT test results from various holes and samples

Hole ID /	Composite		Head Grade			Iron Fines		Davis Tube Test Grade		
Sample	interval	Fe	SiO ₂	Al_2O_3	Fe	SiO ₂	Al_2O_3	Fe	SiO ₂	Al_2O_3
	m	%	%	%	%	%	%	%	%	%
BEKD01		45.1	16.0	3.7	63.0	4.3	1.9	69.8	0.6	0.7
1	0.0 - 0.8	60.6	6.6	2.8	67.6	1.5	1.4	69.9	0.7	0.8
2	8.0 – 13.54	49.6	15.1	2.9	63.6	4.3	2.0	69.6	8.0	0.7
3	13.54 – 20.27	45.1	16.7	4.4	63.3	4.0	2.1	69.6	0.7	0.8
4	20.27 – 26.54	42.5	17.1	4.4	60.5	5.3	2.5	69.4	8.0	0.7
5	26.54 - 32.30	38.9	18.9	3.5	63.4	4.0	1.6	70.1	0.4	0.6
6	32.30 – 37.75	31.4	24.8	5.6	59.5	6.8	2.4	70.1	0.5	0.8
7	37.75 – 43.54	47.5	12.8	2.4	63.0	4.1	1.3	69.9	0.4	0.5
BEKD04		35.1	23.1	3.1	66.1	3.2	0.6	70.2	0.31	0.24
1	0.0 - 5.5	60.1	7.9	4.1	69.7	8.0	1.2	70.1	0.15	0.54
2	5.5 – 11.1	43.9	17.3	2.9	69.6	1.2	0.4	70.0	0.30	0.24
3	11.1 – 19.4	37.4	27.5	3.1	69.2	1.7	0.4	69.6	0.20	0.20
4	19.4 – 25.7	26.4	31.5	2.9	63.7	5.8	0.3	71.1	0.34	0.01
5	25.7 – 31.3	25.5	22.2	2.3	61.9	4.3	0.2	70.8	0.18	0.01
6	31.3 – 38.1	24.2	32.3	3.5	62.2	5.4	1.0	69.8	0.69	0.45
BEKD10		47.9	16.8	3.2	62.4	3.2	1.7	69.3	1.1	0.8
1	0.0 - 5.62	56.6	11.9	3.3	67.7	2.2	1.8	68.3	1.8	1.3
2	5.62 – 11.37	32.5	31.0	3.9	50.5	16.2	2.5	68.7	1.8	0.7
3	11.37 – 17.0	38.7	25.5	4.3	57.8	9.7	2.5	69.8	1.1	0.7
4	17.0 - 23.0	52.9	12.9	3.4	66.9	2.0	1.6	69.8	8.0	0.8
5	23.0 - 28.9	52.0	14.2	3.2	65.5	3.4	1.6	69.8	0.6	0.7
6	28.9 - 33.6	44.2	15.8	2.4	61.2	5.1	1.2	70.0	0.4	0.6
7	33.6 – 37.2	58.5	6.7	1.7	67.5	1.0	0.5	68.9	0.9	0.5
BEKD34		53.2	7.7	1.6	66.0	1.9	8.0	69.5	0.6	0.5
1	0.0 - 4.9	59.4	7.2	2.7	69.0	0.6	0.9	68.9	1.2	1.0
2	4.9 - 10.4	62.1	4.7	1.6	68.1	1.0	0.9	69.4	0.6	0.7
3	10.4 – 14.8	41.1	18.2	1.8	64.3	3.3	0.6	69.7	0.9	0.2
4	14.8 – 18.7	51.0	8.6	1.5	65.0	2.5	0.7	70.4	0.4	0.3
5	18.7 - 23.0	54.1	4.9	1.1	66.2	1.6	0.7	69.5	0.4	0.5
6	23.0 - 29.36	59.2	3.5	0.9	66.0	1.5	0.7	70.0	0.4	0.4
7	29.36 – 34.8	45.6	6.9	1.3	63.3	2.5	0.8	68.8	0.5	0.4

Green steel; the quest for cleaner feedstocks

- Decarbonising the steel industry will require a wholesale switch to EAF steelmaking and cleaner feedstocks
- Wood Mackenzie estimates the consumption of high-grade iron ore pellet feed will have to increase some 5.5x, to 750Mt by 2050
- Metallurgical tests demonstrate the ore at Bekisopa is readily upgradeable to a high-Fe content, low impurity product suitable for DRI

Steel is one of the most ubiquitous substances in modern life. It is a key input in buildings, infrastructure, transportation, machinery and consumer goods. It's combination of high strength, workability, durability, and relatively low cost mean it is unlikely to be widely substituted. The industry is substantial, with global revenues of ~US\$2.5 trillion in 2019, and direct employment of about 6 million people. Global steel consumption reached ~1.9bn tonnes in 2021. Wood Mackenzie has estimated this will rise by 15% to 2.2bn tonnes by 2050.

Yet steelmaking is highly energy intensive. Iron and steel production accounts for more than 7% of total final energy consumption, and more than a quarter of final industrial energy consumption. It is also carbon intensive with direct carbon emissions of ~2.6 gigatonnes of carbon dioxide (Gt CO₂) pa. This represents about one-quarter of all industrial CO₂ emissions, reflecting the heavy reliance on coal as a fuel and coke as a reducing agent. About 85% of emissions from steelmaking are generated by the reduction and smelting of ore. The International Energy Agency (IEA) estimates that a further 1.1 Gt CO₂ of emissions are attributable to the use of off-gases such as blast furnace and coke oven gases, and other fuels to generate electricity and heat.

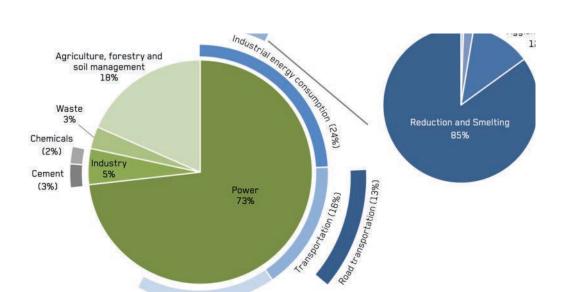


Figure 43: Steel industry emissions

Source: Champion Iron, November 2022

Limiting the rise in global temperatures to 1.5°C in line with the Paris Agreement will require huge changes in global steel production. Wood Mackenzie estimates in its 1.5°C Accelerated Energy Transition Scenario (AET-1.5), that for the iron and steel industry to successfully decarbonise, and achieve net zero emissions by 2050, industry emissions would need to fall by more than 90% from current levels. Achieving this will require three-quarters of global steel production to use low carbon technologies by 2050. Wood Mackenzie recognises this is a "staggering ask".

The single biggest factor in realising this transition will be a switch to electric arc furnaces from blast furnaces. Electric arc furnaces accounted for 26% of global steel production in 2020 according to Worldsteel.org. The IEA has said in its Net Zero 2050 report, that EAF production could account for 72% of global steel production by 2050.

To reduce emissions sufficiently, EAFs will have to be powered from renewable sources, and they will have to become more efficient. Commercialising technologies such as hydrogen-based DRI is seen as essential. Crucially, steel makers will need a higher quality of metallic feedstock. **Wood Mackenzie estimates the consumption of high-grade iron ore pellet feed will have to increase some 5.5x, to 750Mt by 2050.**

Global iron ore miners will need to invest heavily in new, high-grade projects. Wood Mackenzie estimates the cost of new mines alone at US\$75-125bn. Without this investment, the market for DR pellet feed looks likely to be in deficit by the mid-2030s, with a deficit of as much as 350Mt or so by 2050. Brazil, as a result of the high quality of its ore, and Africa look likely to become key suppliers of DRI and pellet feed materials. **Deposits such as Bekisopa look set to become of far greater importance.**

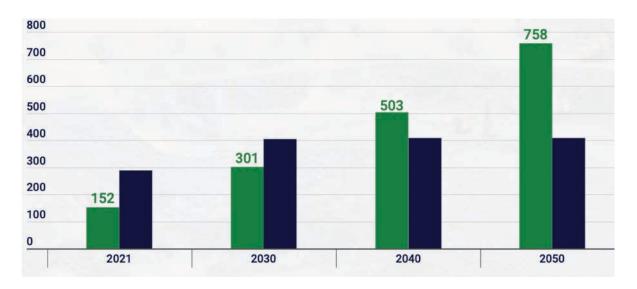


Figure 44: High-grade ore / DR pellet feed demand and supply

Source: Wood Mackenzie, AET-1.5

https://www.woodmac.com/horizons/pedal-to-the-metal-iron-and-steels-one-point-four-trillion-usd-shot-at-decarbonisation/

https://www.championiron.com/wp-content/uploads/2022/11/november-2022-investors-presentation-vfinal.pdf

Steelmaking 101

Steel is typically made in one of three main ways. The most common method is the integrated blast furnace, basic oxygen furnace (BF/BOF) process. Iron oxide is reduced (meaning oxygen is removed) with coke. The remaining pig iron, which still contains high levels of carbon, is processed in BOFs, where oxygen is used to reduce the carbon content, typically to about 0.25%. In 2020, this process was used to produce about 73% of world crude steel production.

Most iron ore is produced as fines which need to be agglomerated into either sinter (<6.3mm) or pellets (9-16mm) before being charged into a blast furnace. Lump (>6.3mm) attracts a premium price because, given its size, it does not have to be sintered or pelletised. Fines account for about 70% of global seaborne iron ore, with lump representing another 17%.

Another steelmaking method is to recycle steel scrap by melting it in an EAF. This has the advantage that it does not require iron ore and coking coal, though steel cannot be recycled indefinitely because small metal impurities build up in the steel over time.

A third method is to produce DRI which can also be turned into steel in an EAF. A key difference is that in DRI production, iron oxide is reduced using carbon monoxide and hydrogen and without having to be melted. The carbon monoxide and hydrogen can be derived from natural gas, or from gasified coal though increasingly companies are looking to use all hydrogen. In 2020, DRI-EAF processes represented about 8% of global iron production, though according to the IEA, in some regions, especially in the US, DRI-EAF production still has a high ratio of scrap to DRI inputs.

In 2020, EAFs accounted for 26% of global steel production.

Coal iron ore

Blast Furnace – Basic Oxygen Furnace
(BF – BOF)

Transition; Blend >65% Fe

1.8

1.5

Scrap

Orid electricity

Electric Arc Furnace
(EAF)

Future; >67% FE
Low impurities <3% Si + Al

Scrap

DRI

Future; >67% FE
Low impurities <3% Si + Al

Figure 45: Summary of steel making technologies

Source: Magnetite Mines, October 2022

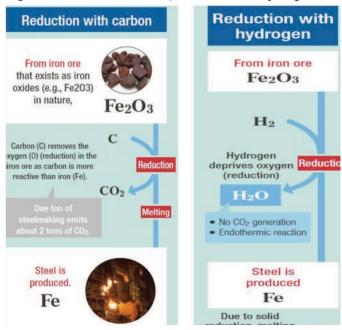
The potential for green hydrogen, and the issue with iron ore

Green hydrogen is attracting increasing attention globally as a fuel that can help decarbonise various industries, including steel. Green hydrogen, derived from electrolysis powered by renewable energy, can replace hydrogen and carbon monoxide derived from fossil fuels, in DRI steelmaking. This would eliminate CO_2 emissions from the reduction of iron ore.

Whilst considered vital, the wholesale switch of the steel industry to green hydrogen DRI processes is not without challenges. One difficulty is potentially the lack of availability of suitable iron ore.

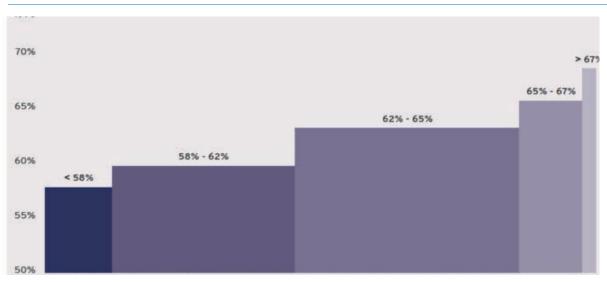
According to Vale, only 3% of global seaborne iron ore shipments are of >66% Fe content material.

Figure 46: Iron ore reduction, carbon versus hydrogen



Source: Nippon Steel, Institute for Energy Economics and Financial Analysis

Figure 47: Seaborne iron ore by Fe content



Source: Mission Possible Partnership, Institute for Energy Economics and Financial Analysis

DRI needs higher quality ore

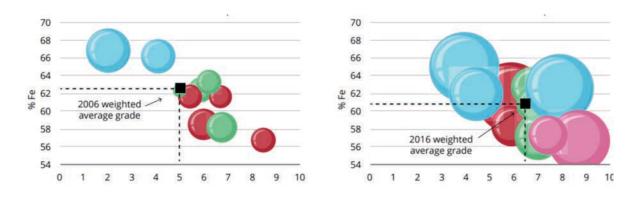
One of the key differences in direct reduction is that the iron oxide is reduced without being melted. One consequence of this is that impurities remain. As a result, DRI processes require higher quality ore. First, a higher iron content means lower levels of impurities. Second, the level of impurities impacts the performance of the EAF. Higher impurity levels both absorb more energy and also lower the melting yield, thereby raising costs. Typical DR-grade iron ore has:

- Fe content >67%
- Aggregate SiO₂ and Al₂O₃ content <3.5%, and ideally <2%
- Phosphorus (as P₂O₅) < 0.015%, but up to 0.08% depending on final product grade

These deposits are relatively scarce.

While in future, higher quality ores will be needed, over the past 20 years or so, mined iron ore quality has deteriorated, largely as the industry raced to meet rapid demand growth from China. According to Raw Materials and Ironmaking Global Consulting, sinter feed grades declined from 63.9% in 1998 to 61.9% in 2019. During the same period, impurity levels have increased with average SiO₂ and Al₂O₃ content increasing from 5.1% to 7.1%, and average phosphorus levels rising from 0.048% to 0.067%.

Figure 48: Leading iron ore miners, Fe and acidic gangue contents



Source: Minerals Council of Australia, Institute for Energy Economics and Financial Analysis

There are a number of options that may help alleviate this lack of availability of DR-grade iron ore. One would be a major switch from haematite mining to magnetite. Although magnetite ores tend to have lower head grades, the fact they are magnetic means they can be beneficiated, often to DR-grade. The head grade at Bekisopa is 32%, yet metallurgical tests have demonstrated concentrate grades of around 70%, and with low impurities.

Green hydrogen is currently more expensive than hydrogen derived from fossil fuels. Similar to electric vehicles and the trend of declining battery costs, there is focus on declining green hydrogen costs and achieving cost competitiveness. The expectation is that green hydrogen based DRI processes will become more cost competitive as renewable energy and electrolyser costs decline. As this happens, deposits like Bekisopa will become far more sought after and valuable.

Appendix 1: Akora's project portfolio

Akora Resources owns three iron ore projects in Madagascar. The flagship project is 100% held Bekisopa, located in central Madagascar. The Bekisopa project includes the Satrokala tenements located some 40km southwest of the main Bekisopa tenement areas. The Tratramarina (100%) and Ambodilafa (90%) projects are situated on the east coast of Madagascar, with Tratramarina about 16km from the coast, and Ambodilafa about 50km from the cast.

Figure 49: Akora project locations Moroni 3 Antsiranana COMOROS Mayotte Sambay Andapa 6 Marovotry Mahajanga OMoraleno Seranambe Ambatob Miarinariyo @ Maevatanana Maria Andasibeo Makaraingo Maintirano oamasina Tsiroanomandidy Saka Antananarivo Indian Tratramarina Antsirabe **Ambodilafa** Malaimbandy Morombe Bekisopa Berandriana Atsimo MADAGASCAR **Toliara** o Ankiliarivo National capital Regional capital Isahara Town, village Airport Roads Railroad Indian 100 © Nations Online Project 200 mi

Madagascar is located in the Indian Ocean about 400km off the east coast of Mozambique, in southern Africa. Madagascar gained independence from France in 1960. Nowadays, the country is governed as a semi-presidential representative democratic multi-party republic in which the President is head of state. The President and the 127 members of the National Assembly are elected by the public to five year terms. Under the constitution, the judiciary is independent of the executive and the legislature. Presidents are limited to serving a maximum of three five-year terms. The administrative capital city is Antananarivo, situated in the geographical centre of the island, in the highlands. Antananarivo was estimated to have a population of 1.4m people in 2017.

The country has a population of about 27.8m people, of which about 40% is under the age of 15 and about 61% under the age of 25.

The climate is largely determined by the south-eastern trade winds originating in the Indian Ocean anticyclone and north-westerly typhoons. Madagascar has a hot and rainy season that lasts from November to April, and a cooler and dry season that lasts from May to October. December to March are the hottest months, with island temperatures typically ranging from 21°C to 29°C. July is the coolest month, when temperatures are typically 14°C to 24°C. Average monthly precipitation varies from 32mm in September the driest month, to 312mm in December, the wettest.

Madagascar's east coast is generally wetter with heavy rains supporting the rainforest ecosystem. The central highlands are cooler and drier. The west of the country is drier still. The southern and southwestern areas of the interior part of the island are semi-arid; this area hosts Bekisopa.

The country produces nickel, chromium, cobalt and ilmenite, and has extensive deposits of various minerals.

Rio Tinto owns an 80% stake in QIT Madagascar Minerals (QMM), near Fort Dauphin in the south-eastern region of Anosy, with the Government of Madagascar owning the remaining 20%. QMM produces ilmenite, a key source of titanium oxide.

Ambatovy is a joint venture between Sumitomo Corporation and the Korea Mine Rehabilitation and Mineral Resources Corporation (KOMIR, formerly KORES). Ambatovy produces nickel, cobalt and ammonium sulphate. The company's mine is located near the town of Moramanga, in the Alaotra Mangoro Region, 80km east of Antananarivo. According to Ambatovy, lateritic ore slurry is delivered from the mine site via a 220km pipeline to a processing plant and refinery located near Toamasina on Madagascar's east coast.

Akora's licences

The Akora iron ore projects are held under 14 separate exploration and mining licences with a combined total area of some 67,890 Ha. The Bekisopa project is held under three granted research permits (PRs) and one granted small-scale mining permit (PRE). The Bekisopa exploration licences held under Iron Ore Corporation Madagascar sarl (IOCM) have a combined area of about 93.5 km².

The understanding is that Akora has paid all administration fees due to the Bureau du Cadastre de Minier Madagascar but that the Permits have not yet been renewed as the Government focuses on updating its Mining Code. Under Malagasy law, companies that have paid fees on time and in good faith are protected. Management expects their permits, as well as many others in the situation, to be updated in due course.

Figure 50: Akora licence details

Tenement	Permit ID	Permit	Number of	Granted	Expiry
holder		type	blocks	date	date
Bekisopa					
IOCM	10430	PR	64	04/03/2004	03/03/2014
IOCM	26532	PR	768	16/10/2007	03/02/2019
IOCM	35828	PR	80	16/10/2007	03/02/2009
IOCM	27211	PR	128	16/10/2007	23/01/2017
IOCM	35827	PR	32	23/02/2007	23/01/2017
Razafindravola	3757	PRE	16	26/03/2001	25/11/2019
Tratramarina					
UEM	16635	PR	144	23/09/2005	04/09/2015
UEM	16637	PR	48	23/09/2005	04/09/2015
UEM	17245	PR	160	10/11/2005	04/09/2015
Rakotoarisoa	18379	PRE	16	11/01/2006	27/03/2012
Rakotoarisoa	18891	PRE	48	18/11/2005	27/03/2012
Ambodilafa					
MRM	6595	PR	98	20/05/2003	19/05/2013
MRM	13011	PR	33	15/10/2004	14/10/2014
MRM	21910	PR	3	23/09/2005	22/09/2015

Source: Akora

Bekisopa

Akora acquired its initial 75% stake in Bekisopa in 2014 via the acquisition of a 75% stake in Iron Ore Corporation Madagascar sarl (IOCM) from Cline Mining Corp. The acquisition of the remaining 25% was negotiated with Cline in mid-2020, with the deal being completed in August 2020. Bekisopa is now wholly owned by Akora.

Location

Bekisopa is situated some 220km from the west coast of Madagascar. It is accessed from the Malagasy capital, Antananarivo, along sealed national highway 7, and then dirt tracks. The nearest village is about 17km from the project site.

Geology and mineralisation

The main tenement area at Bekisopa, PR 10430, is situated within the Paleoproterozoic crustal rocks of southern Madagascar and is associated with the Malakialina Formation of the Vohibory Group

according to the old Malagasy Geological Survey. The formation comprises a sequence of mica schists, gneiss, marble quartzite and amphibolite, and is the main host of iron mineralisation in the area. The quartzites form well-defined ridges. Granites and migmatites intrude into formations in the region, and isoclinal folding is evidenced by quartzite outcrops and magnetic survey results.

Outcropping to sub-cropping massive magnetite-haematite can be observed, with overlying limonitic-geothitic laterite, canga (consolidated iron-rich gravel) and red coloured soil containing magnetite and haematite particles that are sand-sized. Primary textures in the outcrops suggest this could be primary mineralisation, possibly with some weathering. The massive magnetite-haematite mineralisation has demonstrated 60% to 67% Fe-content.

The mineralisation at Bekisopa differs from that at Tratramarina and Ambodilafa in that it lacks the magnetite-quartzite typical of Algoma style iron deposits. The main mineralisation appears to comprise massive magnetite-haematite bands varying in width from a few metres to 20-50m, within a magnetite bearing sequence of amphibolites and calc-silicates that could be more than 100m wide in some places.

Figure 51: Sub-crop of Magnetite-Hematite and Red Soil Weathering Product

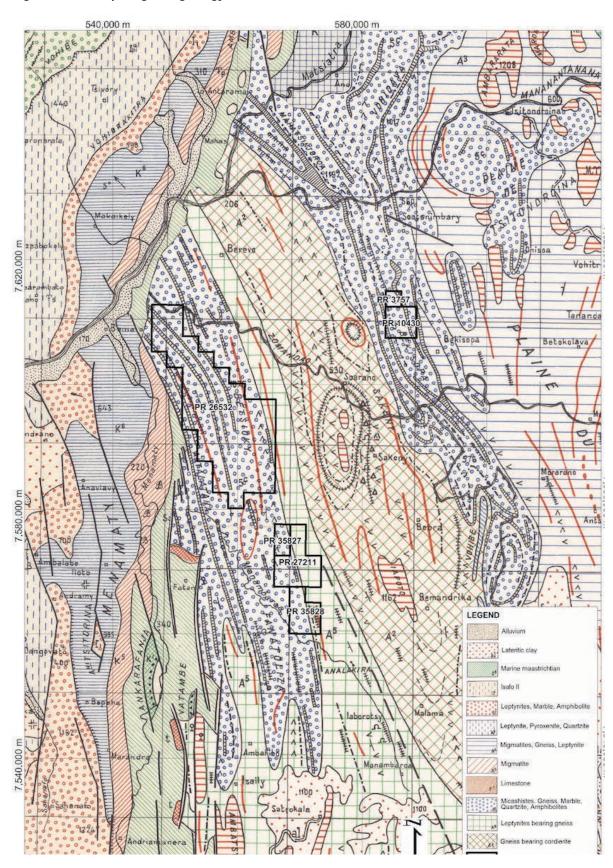


Source: Akora

Figure 52: High grade drill core in hole BEKD29



Figure 53: Bekisopa regional geology



560,000 m 600,000 m 7,620,000 m Wr Morara 7,580,000 m LEGEND Main village Lithology boundary Tenement boundary Roadway National Streat 7 7,540,000 m River LITHOLOGY CODE LITHOLOGY CODE

Al: Alluvium, Sands

Cc: Conglomerate, sandstone, gypsum clay

Cg: Cordierite bearing gneiss of lantsitsira lhosy

Cl: Clay with pyrites, argilites, psammitic sandstone

Gl: Garnet bearing leptynite

La: Lateritic clay

Ma: Marble

Mi: Migmatite granite, granitoid migmatite

Rc: Red clay Sandstone

Figure 54: Bekisopa Project Geology on Magnetics

Historical exploration

Mineralisation at Bekisopa was first reported in 1933, and since then has been subject to various exploration programs. The French group, Bureau de Recherches Géologiques et Minières (BRGM) explored the area from 1959 to 1962, carrying out mapping, geophysical surveying, trench work, drilling and petrology, and geochemical and metallurgical evaluations. BRGM mapped iron mineralisation over a 5km strike length and reported widths of 200-300m in the north, where the deposit is steeply dipping, and up to 1km in the south where the dip is shallow. Trenching and pit sampling demonstrated that high grade iron mineralisation of more than 50% Fe-content occurs in the surface and enriched primary zones.

The United Nations Development Program (UNDP) undertook similar work in 1976-1978, completing further mapping and sampling and in-filling the BRGM pits so as to sample the 5km strike length at 100m spaced lines. UNDP stated a potential resource of +150Mt.

After this, work did not recommence until the 2000s. In 2004-2006, Fugro undertook a World Bank funded airborne magnetic and radiometric survey with 500m spacings that defined an anomaly coincident with the 5km strike length of iron mineralisation. Cline Mining, who held the project in 2005-2010 undertook ground magnetic, gravity and ground penetrating radar surveys and demonstrated the presence of a gravity anomaly associated with the iron mineralisation.

Akora acquired the project in 2014, and over the following five years undertook various programs of data compilation, confirmatory rock chip sampling, mapping, reinterpretation of the airborne physical data, and a ground magnetic survey. In 2014, Akora collected 118 rock chip samples from pits, sub-crop and outcrop that demonstrated average grades of 66.7% Fe, 1.5% SiO₂, 1.0% Al₂O₃ and 0.075% P, over the entire 5km strike length.

In 2019, Akora commissioned a ground magnetic survey, with the data imaged and modelled by Planetary Geophysics in Australia. The data highlighted a good magnetic anomaly over the mapped iron mineralisation. This is shown in Figure 56, with the magnetite-haematite outcrops and sub-crops shown in black. Key findings from the survey include:

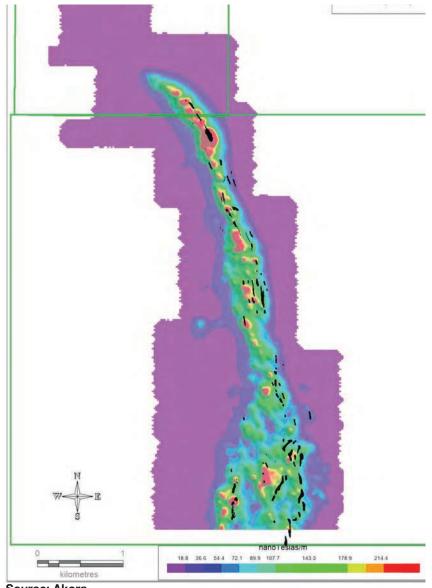
- There is a relatively consistent magnetic body extending over a strike length of some 7km
- The Northern section demonstrates a depth of at least 500m and a possible width of 150m and is dipping to the west
- The Central section appears to be several magnetic anomalies with depths of at least 300m and widths varying from 40m to 150m
- The Southern section is folded and more complex, and hosts several magnetic anomalies; the western body extends to a depth of 500m or more, and the eastern body extends to a depth of 200m

Since 2020, Akora has undertaken a concerted drilling program, drilling 63 holes for a total of 6,215m in 2020 and 2021, which included the fast-tracking of some the planned 2022 work. In 2022, the company completed an 85 drill hole in-fill drilling program at the Southern Zone.

Figure 55: Snapshot of Bekisopa exploration history

1959-1962	BRGM	Geological mapping, geophysical surveying, trenching (4,000m), pitting (564 pits for
2004-2006	Fugero	World Bank funded airborne magnetic and radiometric survey
2020	Akora	12 drill holes (BEKD01 to BEKD12) for a total of 1,096m

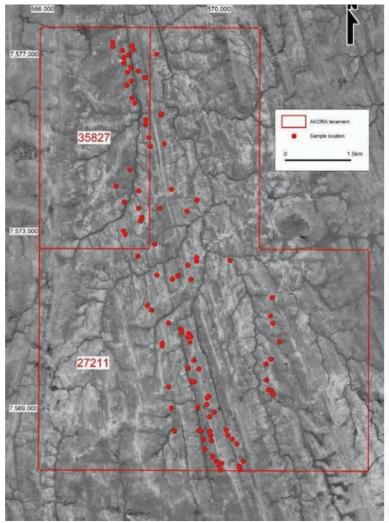
Figure 56: Bekisopa magnetic image and magnetite-haematite outcrops and sub-crops



Bekisopa Southwest Tenements

These tenements, including PR 27211 and PR 35827, are 100% held by Akora. They are located in Satrokala, an area that lies 40km to the southwest of the main Bekisopa exploration area. Akora reported excellent results from its Satrokala rock chip sampling program in June 2022. The 102 rock chip samples returned results ranging from 16.3% to 68.0% Fe-content with an average of 58.8% Fe. The 66 highest grading samples (about two-thirds of the total) returned an average grade of 64.5% Fe. The sampling highlights the potential for a strike length of some 10km north to south, with a width of as much as 1km in places. These are highly encouraging initial results that demonstrate the potential, with further exploration work, to add additional resources.

Figure 57: Satrokala rock chip samples



Tratramarina

Akora acquired the Tratramarina project in 2011. It is situated 160km southeast of Antananarivo, and 16km from the east coast of central Madagascar. The coastal town of Mahanoro, the largest town in the region, is located some 15km northeast of the project area. The project area can be accessed by bitumen road from either Antananarivo or Toamasina (the major port) to Mahanoro, and then unsealed road to the prospect area.

The project is held under three granted research permits (PR) and two granted small scale mining permits (PREs) that cover a combined area of 162.5 km².

The mineralisation at Tratramarina is a magnetite banded iron formation that grades 35-40% iron. Although there has been small-scale artisanal alluvial gold workings in the Mangoro River area, the Tratramarina iron prospect was little known until Fugro carried out a World Bank funded airborne geophysical survey in 2004-2006. Somewhat sub-optimally, the survey was flown parallel to the general strike of the Archean metasediments, including the banded iron formation, and at wide 500m line spacings. Yet the survey did identify multiple magnetic anomalies with potential for hosting iron mineralisation. The three major magnetic anomalies, known as, Befosa, Tratramarina and Ambalavato are all within the Akora tenement areas.

7794000 m

RATRAMA RINA ANOMALY

778000 m

7784000 m

Figure 58: Tratramarina magnetic image



Figure 59: Outcropping magnetite BIF at Tratramarina

Akora undertook three surface rock chip sampling programs at Tratramarina in 2009, 2010 and 2011, aiming to glean information as to iron grades and impurity levels. Some 305 samples were taken and demonstrated iron grades averaging ~40%. In 2011-2012, Akora undertook a drilling program comprising 7 drillholes (5 at Tratramarina and 2 at Tratramarina East) for a total of 1,360m.

In some drill holes there is evidence of surface enriched, potentially haematite mineralisation, and near-surface weathering effects leading to higher Fe and lower silica grades. Management views the project as a priority exploration target with excellent potential for upgradable magnetite iron ore grading 25-35% Fe.

Figure 60: Tratramarina drill results

Hole ID	From m	To m	Width m	Grade % Fe	Notable intervals
DD11TR001	6	22	16	27.2	11m at 34.5% Fe
DD11TR002	0	32	32	26.2	
DD11TR003	146	190	44	20.4	20m at 25.1% Fe
DD11TR004	0	16	16	29.5	
DD11TR004	64	196	132	29.9	22m at 36.6% Fe, and 35m at 35.7% Fe
DD11TR005	29	64	35	28.5	16m at 36.3% Fe
DD11TR006	80	120	40	22.6	22m at 30.3% Fe
DD11TR007	0	14	14	36.9	
DD11TR007	64	142	78	31.1	28m at 34.6% Fe, and 14m at 36.0% Fe

Ambodilafa

Akora entered into a farm-in agreement for the Ambodilafa project with AlM-listed Jubilee Platinum Plc in August 2012. Under the terms of the agreement, Akora has already earned the rights to 90% of the commodities (including iron ore) but excluding platinum group metals, LME traded metals, and chrome. Akora has indicated to Jubilee that it intends to take up the remaining 10% stake by the payment of a 1.5% net sales royalty. This acquisition would be made by way of partitioning the Ambodilafa permits in such a way that the areas Akora is interested in can be separated, the transfer of one or more of the existing permits, or the transfer of the shares in Mineral Resources of Madagascar sarl (MRM), the Malagasy subsidiary of Jubilee that holds the permits. If during the course of the agreement Akora makes a discovery relating to the excluded metals, Jubilee has certain buy back rights.

The project is situated some 45km west of the coastal town of Nosy Varika and 75km southwest of Mahanoro, which management views as being a natural transhipping port location. Current site access is somewhat difficult requiring travel on unmade tracks and three river crossings.

The project comprises 3 granted Research Permits (PRs) covering a combined area of 52.33 km².

The project was originally regarded as a Ni-Cu-PGM prospect after Cu-Ni alluvial geochemical anomalies were identified in 1963, and BRGM completed an electromagnetic survey in 1964 that highlighted mineralisation. Drilling by BRGM in the late-1960s intersected 93m of disseminated sulphides that returned 1% copper equivalent, though 28 further boreholes drilled in 1968-1969 retuned generally poor results.

In 2004-2008, the area was extensively explored by MGM/Jubilee which undertook a helicopter-borne magnetic survey flown on 100m spaced northwest-southeast lines, and deep drilling. While the drilling results were mixed, a helimag survey identified a strong north-south trending magnetic anomaly that appeared to demonstrate the presence of iron ore. **This large magnetic anomaly lies in the north of the tenement area, has a strike length of about 5km, ranges in width from 100m to 400m, and is modelled to a depth of more than 500m.** Further, an unexplored western limb, about 2km long, is visible in the northern portion of the prospect area.

7750000 m ern Limb 7748000 m Samelany Anomaly 774200 7740000 m1.0 km 3.0 km 5.0 km 7.0 km

Figure 61: Magnetic anomaly at Ambodilafa

Figure 62: Ambodilafa drill results

Hole ID	From	Width	Grade	lotable
DD13SM002	0	12	27.00	
DD13SM004	78	20	37.92	6m at 39.05% Fe
DD13SM006	0	16	31.62	
DD13SM007	66	50	32.19	

Appendix 2: Key drill intercepts

Figure 63: Bekisopa key drill intercepts, Southern Zone

Hole ID	From	To (m)	Interval	Fe	SiO ₂	Al ₂ O ₃	P	S	Comments
	m	m	m	%	%	%	%	%	
BEKD09	0.0	42.9	42.9	36.7	24.0	3.6	0.09	0.017	Composite zone
incl.	0.0	11.3	11.3	51.3	14.8	4.7	0.03	0.014	Weathered Massive Iron
BEKD10	0.0	35.3	35.3	47.3	17.4	3.3	80.0	0.039	Composite zone
incl.	0.0	3.2	3.2	61.3	7.2	3.7	0.10	0.011	Weathered Massive Iron
incl.	13.1	35.3	22.2	51.0	13.6	2.9	0.10	0.049	Massive Iron
BEKD11	0.0	28.3	28.3	58.7	6.7	2.1	0.09	0.274	Composite zone
incl.	0.0	25.2	25.2	61.4	4.9	1.9	80.0	0.287	Weathered Massive Iron
BEKD13	0.0	15.5	15.59	63.4	2.99	1.89	0.09	0.064	Weathered Massive Iron
BEKD16	0.0	12.7	12.70	55.1	11.34	5.34	0.08	0.025	Weathered Massive Iron
incl.	0.0	6.85	6.85	65.5	2.44	2.90	0.07	0.075	Weathered Massive Iron
BEKD17	0.0	2.17	2.17	65.9	1.50	1.24	0.13	0.06	Weathered Massive Iron
BEKD29	0.0	6.24	6.24	66.9	2.09	2.03	0.06	0.003	Weathered Massive Iron
BEKD31	0.0	8.91	8.91	68.2	1.42	1.58	0.06	0.007	Weathered Massive Iron
BEKD32	0.0	20.6	20.6	54.9	5.05	1.56	0.10	0.022	Weathered Massive Iron
incl.	0.0	5.41	5.41	61.9	6.78	3.05	0.05	0.002	Weathered Massive Iron
incl.	9.70	18.4	8.7	63.9	3.14	0.99	0.14	0.045	Weathered Massive Iron
BEKD33	0.0	24.5	24.5	55.3	8.67	1.83	0.13	0.06	Weathered Massive Iron
incl.	0.0	4.5	4.5	65.5	3.73	2.69	0.05	0.003	Weathered Massive Iron
incl.	8.3	16.3	8.0	62.7	6.57	1.23	0.12	0.005	Weathered Massive Iron
incl.	19.8	22.0	2.2	64.8	3.31	1.29	0.09	0.301	Weathered Massive Iron
BEKD34	0.0	29.3	29.3	52.8	8.85	1.67	0.19	0.028	Weathered Massive Iron
incl.	0.0	2.2	2.2	63.4	5.11	2.45	0.10	0.002	Weathered Massive Iron
incl.	4.9	9.4	4.5	62.4	4.65	1.61	0.37	0.005	Weathered Massive Iron
incl.	24.5	29.4	4.9	63.4	2.85	1.05	0.12	0.173	Weathered Massive Iron
BEKD43	35.8	185.4	149.6	37.6	19.3	2.8	0.24	0.200	Coarse Disseminated Iron
incl	84.3	96.9	12.57	52.8	5.5	1.1	0.26	0.254	Massive Iron
BEKD46	16.1	178.9	162.8	35.9	20.1	2.7	0.15	0.198	Coarse Disseminated Iron
incl	68.1	87.6	19.49	63.3	3.7	1.1	0.14	0.083	Massive Iron
incl	88.9	102	13.25	64.4	2.5	0.7	0.14	0.124	Massive Iron
BEKD57	0.00	82.3	82.28	30.8	26.2	2.9	0.16	1.516	Coarse Disseminated Iron
incl	55.0	67.9	12.83	53.6	6.5	1.1	0.23	3.441	Coarse Disseminated Iron
BEKD59	23.1	173.9	150.8	33.2	22.7	2.6	0.21	0.207	Coarse Disseminated Iron
incl	60.7	99.9	39.19	52.4	9.5	1.6	0.25	0.450	Coarse Disseminated Iron
incl	74.3	90.1	15.78	60.7	4.0	1.1	0.28	0.445	Massive Iron

Source: Akora

Figure 64: Bekisopa key drill intercepts, Northern Zone

Hole ID	From	To (m)	Interval	Fe	SiO ₂	Al ₂ O ₃	Р	S	Comments
	m	m	m	%	%	%	%	%	
BEKD01	0.0	70.5	70.5	44.1	16.5	3.4	0.12	0.24	Composite zone
incl.	0.0	25.5	25.5	50.8	13.1	3.6	0.10	0.005	Weathered Massive Iron
incl.	0.0	6.9	6.9	64.7	3.7	2.6	0.05	0.015	Weathered Massive Iron
and	18.4	21.2	2.8	62.5	5.0	2.1	0.10	0.002	Weathered Massive Iron
BEKD19	0.0	4.59	4.59	63.9	3.9	3.7	0.06	0.002	Weathered Massive Iron
and	7.12	35.3	28.20	41.2	18.1	2.9	0.15	0.005	Coarse Disseminated Iron
incl.	7.12	24.5	17.38	47.0	15.6	2.7	0.17	0.07	Fine Disseminated Iron
incl.	12.58	23.50	10.92	50.2	13.2	2.1	0.15	0.003	Massive Iron
BEKD20	0.0	18.4	18.40	41.3	19.1	3.4	0.15	0.008	Coarse Disseminated Iron
incl.	0.0	7.0	7.0	45.6	16.9	4.4	0.13	0.004	Weathered Coarse Iron
and	38.56	44.67	16.11	40.5	19.2	3.7	0.13	0.83	Coarse Disseminated Iron
BEKD24	0.0	3.90	3.90	63.8	3.9	3.9	0.04	0.004	Weathered Massive Iron
and	9.14	13.16	4.02	50.4	11.8	1.8	0.26	1.28	Massive Iron
and	19.21	24.30	5.09	53.6	9.1	2.6	0.71	0.03	Massive Iron
BEKD25	4.20	13.81	9.61	55.2	9.9	2.7	0.12	0.006	Weathered Massive Iron
and	42.0	46.72	4.72	37.8	19.6	2.7	0.09	0.27	Coarse Disseminated Iron
BEKD50	49.3	125	76.34	36.2	22.1	3.1	0.22	0.038	Coarse Disseminated Iron
incl.	54.52	64.08	9.56	48.6	12.0	2.4	0.42	0.009	Coarse Disseminated Iron
incl.	76.60	83.50	6.90	43.7	17.4	2.9	0.18	0.016	Coarse Disseminated Iron
incl.	101.7	113.0	11.3	40.5	18.9	2.9	0.20	0.006	Coarse Disseminated Iron
incl.	120.2	125.7	5.45	50.0	12.0	2.7	0.09	0.33	Massive Iron
BEKD52	88.7	161	72.72	33.9	23.7	3.6	0.23	0.167	Coarse Disseminated Iron
incl.	125.4	157.3	31.9	40.1	19.1	3.1	0.20	0.234	Coarse Disseminated Iron
incl.	141.4	157.3	15.85	45.5	15.6	2.5	0.17	0.37	Coarse Disseminated Iron
BEKD53	144	249	105.5	31.3	25.3	3.6	0.22	0.099	Coarse Disseminated Iron
incl.	207.2	226.9	19.7	38.7	20.6	3.1	0.28	0.123	Coarse Disseminated Iron
incl.	231.8	247.6	15.8	43.8	17.3	3.1	0.20	0.169	Coarse Disseminated Iron

Figure 65: Bekisopa key drill intercepts, Central Zone

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Hole ID	From	To (m)	Interval	Fe	SiO ₂	Al ₂ O ₃	Р	S	Comments
	m	m	m	%	%	%	%	%	
BEKD04	0.0	10.0	10.0	57.1	9.9	3.2	0.08	0.004	Weathered Massive Iron
incl.	0.0	4.7	4.7	61.4	6.1	4.2	0.05	0.003	Weathered Massive Iron
and	13.1	21.4	8.3	34.8	29.2	3.2	0.12	0.001	Weathered Coarse Iron
BEKD08	0.0	53.0	53.0	25.6	27.4	3.9	0.11	0.034	Composite zone
incl.	29.0	35.3	6.0	58.4	6.1	1.2	0.13	0.219	Massive Iron
BEKD37	0.00	37.4	37.45	31.0	23.8	4.32	0.07	0.219	Coarse Disseminated Iron
incl.	1.00	4.26	3.26	53.6	12.9	6.10	0.044	0.027	Weathered Coarse Iron
BEKD38	50.4	79.7	29.3	48.6	10.4	1.79	0.13	2.77	Coarse Disseminated Iron
incl.	50.5	65.3	14.8	52.6	8.69	1.64	0.149	3.17	Coarse Disseminated Iron
BEKD39	0.00	11.7	11.78	49.5	16.7	4.43	0.04	0.003	Weathered Coarse Iron
BEKD41	0.00	25.4	25.40	41.2	19.6	3.01	0.13	0.005	Coarse Disseminated Iron
incl.	0.00	4.98	4.98	59.3	7.63	4.09	0.066	0.004	Coarse Disseminated Iron
BEKD42	0.00	14.6	14.60	43.7	13.7	3.98	0.16	0.004	Coarse Disseminated Iron
incl.	10.60	14.60	4.00	53.7	11.1	2.89	0.234	0.004	Coarse Disseminated Iron

Source: Akora

Appendix 3: Companies mentioned

Figure 66: Companies mentioned in this report

Company	Stock code
Akora Resources	AKO.AX
Anglo American	AAL.L
ArcelorMittal	MT
Base Resources	BSE.AX
Champion Iron	CIA.AX
Fortescue Metals Group	FMG.AX
Hawsons Iron	HIO.AX
Iron Road	IRD.AX
Jubilee Metals Group	JLP.L
Kumba Iron Ore	KIO.JO
Macarthur Minerals	MIO.AX
Magnetite Mines	MGT.AX
NMDC Ltd	NMDC.NS
Novolipetsk Steel	NLMK
Pacific Basin Shipping	2343.HK
Rio Tinto	RIO.AX
Sumitomo Corporation	8053.T

Source: Company data

The author

Simon Francis is a UK qualified chartered accountant with significant experience in the natural resources and minerals sector. Simon led research in the sector in various roles at major financial institutions including Macquarie, Samsung and HSBC, in a career spanning more than 20 years. He has been involved in approximately US\$4bn of capital raising, for a number of natural resources companies. Simon has been engaged in the financing of early stage companies using production agreements, and has privately funded exploration companies in various metals and jurisdictions. Simon seeks to deploy capital in undervalued mining and resources opportunities that have been missed by the market.