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Spodumene, a pyroxene mineral consisting of lithium aluminium inosilicate, a source of lithium | Photo: Firefinch Goulamina DFS Update, December, 2021

# White Gold in Timbuktu

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The political risk in Mali has scared investors away from investigating the value of Firefinch (FFX ASX). We believe Firefinch's under-appreciated lithium asset, Goulamina, alongside its operational gold mine, Morila, are significantly undervalued based on the current market capitalization. We view both the gold and the lithium project as de-risked as they are operational and fully funded respectively. We believe Firefinch should be trad-

ing at a valuation of between \$1.68 bln and \$2.28 bln.<sup>1</sup> With the current market cap at \$990 mln, the upside is between 70% and 130%.

The catalyst for a reappraisal of the company's value is when Goulamina is spun out and separately listed as Leo Lithium at the end of this month.<sup>2</sup> Only Firefinch shareholders, on the day of record, will receive pro-rata entitlement of Leo Lithium

<sup>1</sup> All currency in this report is in Australian Dollars unless stated otherwise

<sup>2</sup> <https://www.investi.com.au/api/announcements/ffx/498fe1f2-edb.pdf> and <https://www.investi.com.au/api/announcements/ffx/f630aae1-97f.pdf> The company originally announced "March Quarter 2022" in August last year and now says "early 2022" it would appear due to the need to move the project exploration licence into a "single purpose Malian subsidiary." This spin-off may now be later than March.

**Firefinch** (FFX ASX)

March 23, 2022

# JCAP

shares and an entitlement offer for an additional capital raise for Leo Lithium.<sup>3</sup> One last step, the establishment of an approved Malian subsidiary to hold the mining and exploration rights of the project, is now required before the de-merger proceeds.

When we compare the Goulamina lithium project to the market value of eight other lithium companies with hard-rock lithium projects, we believe Goulamina is worth at least double what the market currently values it at. When you subtract the value of the Morila gold project (which we value at about \$275 mln) from Firefinch's current market cap of \$990, you get just \$715 mln for the lithium project. Even at our low-end estimate, Goulamina should be valued at \$1.4 bln.

The Goulamina lithium project is a large low-cost hard-rock lithium project in the West African nation of Mali. Comparing Goulamina to eight other hard-rock projects due to come online over the next two to three years, we found that Goulamina:

- ▶ Will be the highest-producing mine
- ▶ The third-largest resource
- ▶ Third-lowest costs
- ▶ Second-lowest capital intensity

The Goulamina lithium project is fully funded, unlike other more promotional Australian lithium companies, by its joint-venture partner Ganfeng Lithium (1772 HK) one of the largest lithium chemical producers. Ganfeng has also agreed to a 100% of the mine offtake.

Firefinch is mining gold from Morila, an old Barrick Gold (GOLD US) mine in Mali nicknamed "Morila the Gorilla" in its heyday for the sheer volume of gold it produced. Morila mined 46,000 ounces in 2021 and is ramping up production to over 120,000 ounces of gold in 2022. It is projected to expand to 200,000 ounces by 2024, with capital expenditure of \$80 mln, and it already has the cash in the bank to do that.<sup>4</sup>

We engaged a team of geologists who spent weeks reviewing the available historical and current geological data on Morila. We have made a very conservative production assumption about the mine, as not all of the required reserves for the life-of-mine plan are yet proven by the drilling program. We therefore value it on the low end as achieving average annual production of 100,000 oz and on the upside of achieving the target of 156,000 oz. Our low-end valuation for Morila is \$275 mln and high end is \$430 mln. We have totally discounted any potential upside from an underground mine. This is more conservative than street analysts, who believe Morila is worth double our low-end target.<sup>5</sup>

We spoke with eight gold and lithium geologists and mining engineers operating similar mines in Africa, Australia, and Canada to evaluate Firefinch's projects. We spoke with one political analyst and the head of a major miner in Mali to understand the political risk of the country. It turns out that Mali is not as risky as you may expect for resource investment.

## Major mining companies love Mali

*"Government after government [in Mali] have believed in the importance of mining in their economy and they support investment in gold mining."<sup>5</sup> He went on to say "[W]e are now looking at expanding in Mali."*

– Clive Johnson, CEO of B2Gold, with the highest-producing mine in Mali, February 2022

*"We see this region as one of the world's most promising gold districts. And in a recent meeting with the country's Minister of Mines, he confirmed his commitment to Barrick as a partner, while I explained our interest in continuing to invest in exploration across Western and Southern Mali in our hunt for the next Loulo-Gounkoto mine."<sup>6</sup>*

– Mark Bristow, the CEO of Barrick, the largest investor in resources in Mali, November 2021

3 <https://www.investi.com.au/api/announcements/ffx/f630aae1-97f.pdf>

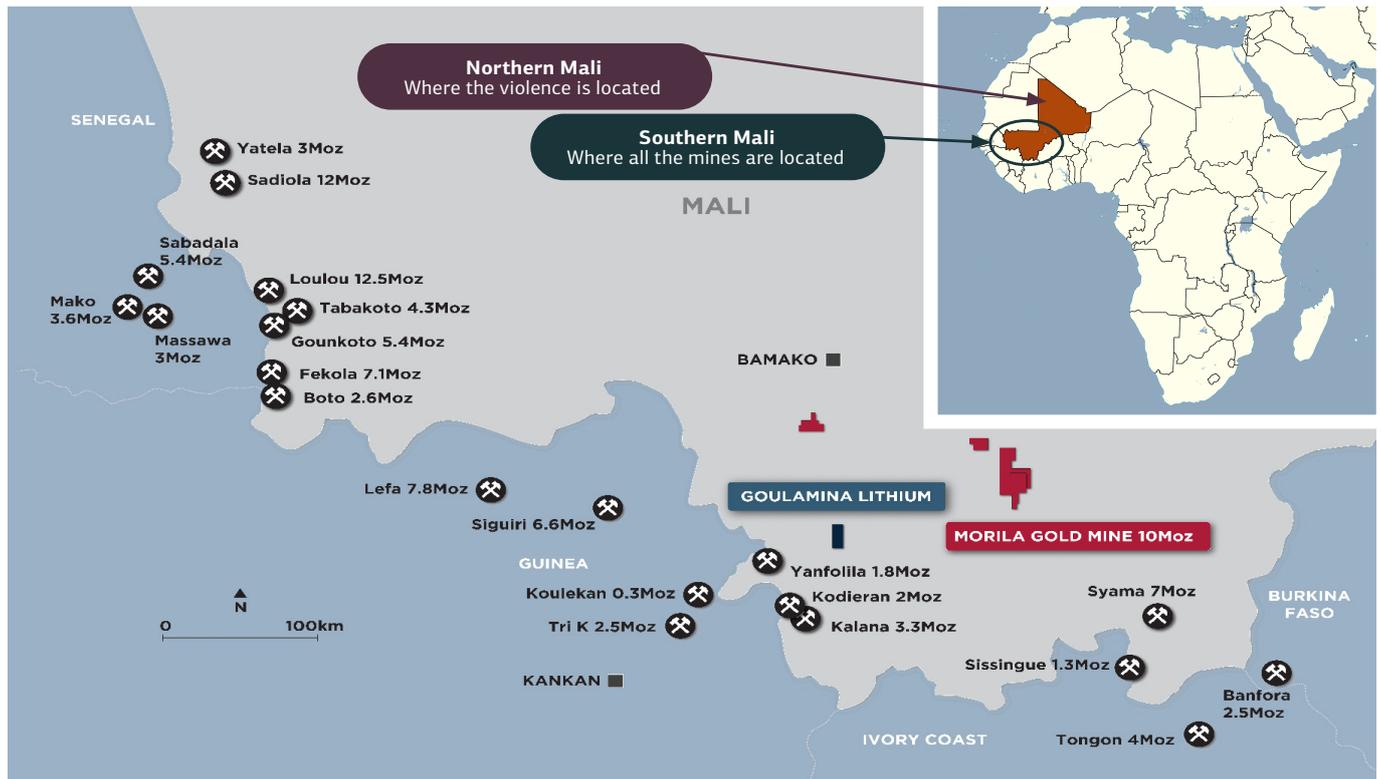
4 <https://www.investi.com.au/api/announcements/ffx/7a37ce1f-a53.pdf> and <https://www.investi.com.au/api/announcements/ffx/021e7531-cca.pdf> and <https://www.investi.com.au/api/announcements/ffx/498fe1f2-edb.pdf> and <https://www.investi.com.au/api/announcements/ffx/12cf809f-185.pdf> Capital cost originally stated at up to US\$66 mln and we estimate at least US\$8 spent to date and recent capital raises have raised sufficient capital.

5 Euroz Hartley Nov 29, 2021, Canaccord Genuity Dec 7, 2021, Sprout Nov 25, 2021

6 B2B Earnings call Feb 23, 2022

7 Barrick Gold 3Q Earnings Call transcript November 4, 2021 from S&P Global

## Mali: Troubled North, Stable South



Source: Company report & Wikimedia Commons

A poor, landlocked West African nation, Mali has had two recent coups d'état and has suffered from violence in the North and Central regions for a decade.<sup>8</sup> Despite the violence and political

uncertainty, major global miners like Barrick Gold (GOLD US) continue to invest. Over the past five years, international companies have invested US\$1.6 bln in four mines in southern Mali.

## US\$1.6 bln in Major Mine Investments in Southern Mali Since 2016

Mine	Mine Type	Mine Production (MTPA Ore/y)	Mine Output (oz/y)	Company	Ticker	Description	Recent Investment (USD Mln)	Investment Period
Loulo-Goukoto	Gold	4.9	550,000	Barrick Gold	GOLD US	BHP before Randgold/ Barrick operated, contributed between 5 -10% of Mali GDP. Continued investment.	Underground mine expansion \$600 mln	2019-2021
Fekola	Gold	7	550,000	B2Gold	BTO TSX	Established the mine	Mine construction \$500 mln	2016-2018
Sadiola	Gold	7.2	100 to 500,000	Allied Gold	Private	Acquired from AngloGold Ashanti and Iamgold	Acquisition \$105 mln estimated expansion investment \$378 mln	2020 - 2022
Syama	Gold	4	250,000	Resolute	RSG ASX	BHP before Rangold sold to Resolute	Underground Mine Expansion \$125 Mln	2017-2019

Sources: Resolute,<sup>8</sup> Barrick Gold,<sup>9</sup> B2Gold,<sup>10</sup> Iamgold,<sup>11</sup> (Sadiola is estimated from Iamgold documents and not Allied Gold Corp actual)

<sup>8</sup> <https://minusma.unmissions.org/en> and <https://www.defense.gouv.fr/english/operations/afrique/bande-sahelo-saharienne/operation-barkhane/dossier-de-reference/operation-barkhane>

<sup>9</sup> <https://www.rml.com.au/syama/>, <https://clients3.weblink.com.au/pdf/RSG/01996170.pdf>

<sup>10</sup> <https://www.barrick.com/English/operations/loulo-goukoto/default.aspx>, [https://s25.q4cdn.com/322814910/files/doc\\_downloads/operations/loulo/loulo-goukoto-2018.pdf](https://s25.q4cdn.com/322814910/files/doc_downloads/operations/loulo/loulo-goukoto-2018.pdf), [https://s25.q4cdn.com/322814910/files/doc\\_presentations/2021/03/Mine-Africa-2021-Mali.pdf](https://s25.q4cdn.com/322814910/files/doc_presentations/2021/03/Mine-Africa-2021-Mali.pdf)

<sup>11</sup> <https://www.b2gold.com/projects/producing/fekola/> and B2Gold AR 2016 and AR 2021

<sup>12</sup> <https://www.sec.gov/Archives/edgar/data/1203464/000106299320001084/exhibit99-1.htm> See pages 99 to 109 and 152 <https://www.sec.gov/Archives/edgar/data/1203464/000119312516519504/d163307dex991.htm>

The two recent coups have had limited impact on mining operations in Mali. Mining companies say working-level bureaucrats do not change regardless of changes in government. Tax revenues from mining contribute at least 30% of total government revenue, according to the World Bank, and mining executives say that governments, whatever their ideological orientation, do not want to interfere with that. State revenue from gold mining companies in Mali actually rose 13% in 2020, the first year of the pandemic. Sanctions are not impacting supplies to mines or exports of gold.

We spoke with a geologist experienced in all regions of Africa, who remarked “Coups happen every Tuesday in Mali.” He said that, while Mali may be unstable, every elected and unelected person who runs the country knows it is financial suicide not to support and protect the mining sector.

### Goulamina lithium: low-cost, high-production, and fully funded

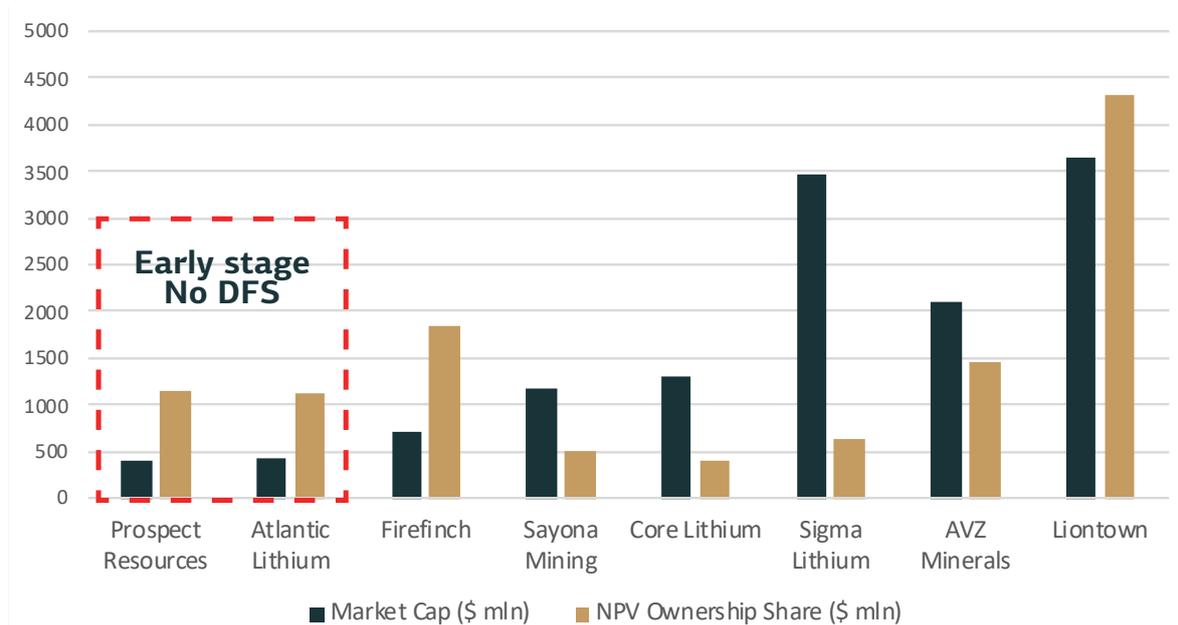
The best lithium projects have large, high-grade resources, low production costs, firm offtake agreements, and funding in place. Firefinch has all of those things.

Firefinch has secured a 100% offtake agreement and funding of the project from its joint-venture partner, Ganfeng, and yet Goulamina is valued in line with smaller, less-advanced projects. We believe it is incredibly cheap. Liontown (LTR ASX), a project that is very similar in most respects except that it is located in Australia, is valued at 3.5x Firefinch or about 5x the market value of the Goulamina lithium project.<sup>13</sup> AVZ Minerals’ (AVZ ASX) Manono project has a similar production profile to Goulamina’s, however, it is valued at 3x Firefinch and 4.4x the Goulamina market value. Manono is located in the DRC, which is a higher-risk country than Mali. The project is further from a port.

### Comparable Lithium Projects

The eight hard-rock projects we chose to compare comprise 80% of the 480,000 tons (Lithium Carbonate Equivalent LCE) we expect to come online over the next two to three years.<sup>14</sup> We have not included lithium solar brine projects, as the two major projects coming online are integrated through to lithium chloride production and are therefore difficult to compare. We have not included lithium geothermal brine projects, because we are not convinced they are viable.

### Firefinch: Undervalued market cap vs project NPV

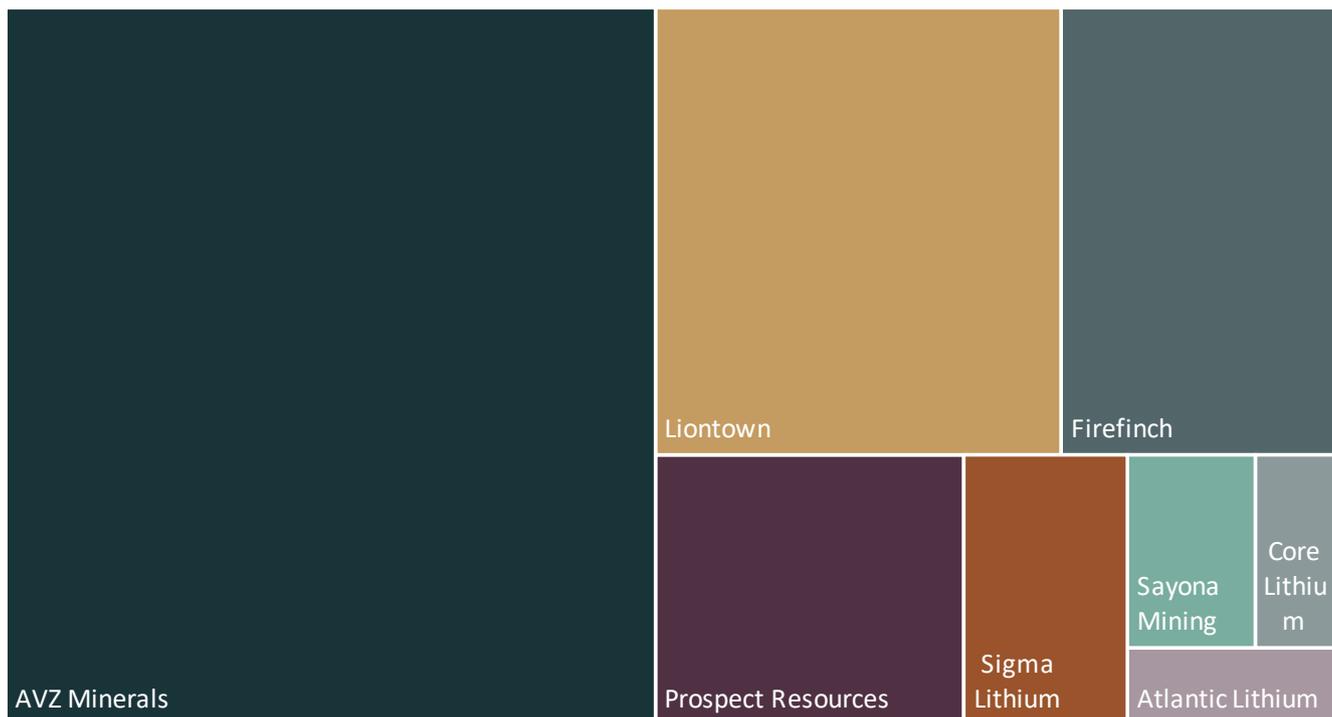


Source: Company Reports and S&P Global, Note Firefinch Market Cap is reduced by \$275 mln to reflect our valuation of the Morila gold project.

13 Market value of the Goulamina project is Firefinch market cap \$978 mln less our low-end valuation of the Morila gold project of \$275 mln which is \$703 mln.

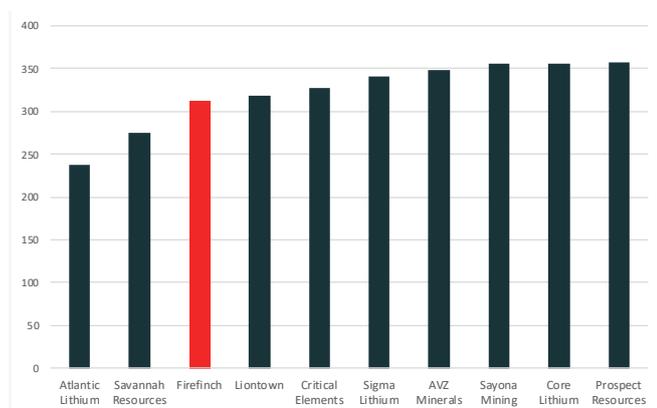
14 We estimate 8 tons of spodumene for 1 ton of LCE <https://www.metalbulletin.com/Article/3868440/Global-lithium-supply-developing-at-accelerating-pace-on-growing-demand.html> and S&P Capital IQ Development Studies data, and S&P Global Market Intelligence Lithium and Cobalt Supply and Demand Model Jan, 24 2022 and <https://www.spglobal.com/marketintelligence/en/news-insights/research/lithium-supply-race-heats-up#:~:text=Strong%20lithium%20price%20momentum%20over,81.8%25%20of%20the%20capacity%20increase.>

## Firefinch: Third Largest Resource



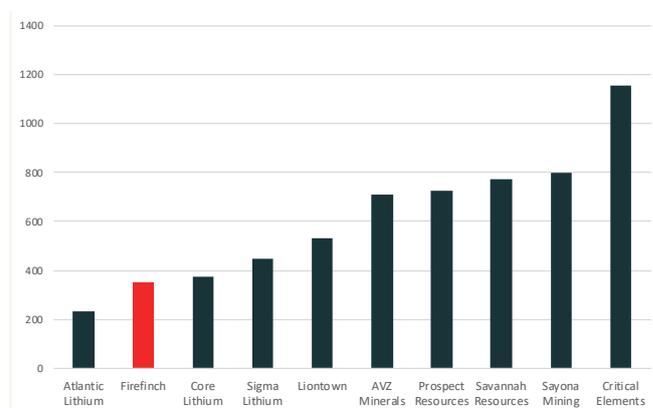
Source: Company Reports

## Firefinch: Third Lowest Cash Costs (USD/ton)



Source: Company Reports

## Firefinch: Second Lowest Capital Intensity (USD/ton concentrate)



Source: Company Reports

## Goulamina comparable projects

Company	Prospect Resources	Atlantic Lithium	Firefinch	Liontown	Sayona Mining	AVZ Minerals	Core Lithium	Sigma Lithium
<b>Ticker-Exchange</b>	PSC-ASX	ALL-LON	FFX-ASX	LTR-ASX	SYA-ASX	AVZ-ASX	CXO-ASX	SGML-US
<b>Project</b>	Arcadia	Ewoyaa	Goulamina	Kathleen Valley	Authier	Manono	Finniss	Grota Do Cirilo
<b>Location</b>	Zimbabwe	Ghana	Mali	Australia	Canada	DRC	Australia	Brazil
<b>Market Cap (\$ mln)</b>	392	417	990	4,078	1,313	3,469	2,089	1,854
<b>NPV Ownership Share (\$ mln)</b>	1,138	1,111	1,845	4,318	503	1,465	400	632
<b>Resources (Mt)</b>	72	14.5	108.5	156	20.9	400	15	38
<b>Li grade (%)</b>	1.11%	1.31%	1.45%	1.40%	1.00%	1.65%	1.35%	1.49%
<b>Capex (US\$m)</b>	192	69	255	344	91	495	65.6	98.65
<b>Average production Spodumene Concentrate 6% (ktpa SC6)</b>	265	295	726	650	114	700	175	220
<b>Recovery rate</b>	78%	49%	81%	78%	78%	60%	72%	60%
<b>Cash costs (US\$/t)</b>	357	238	312	319	356.5	348	356.5	341
<b>LCE Calculated @ 7 tons SC6</b>	37.9	42.1	103.7	92.9	16.3	100.0	25.0	31.4
<b>Capex (US\$ mln/t of Concentrate)</b>	0.7	0.2	0.4	0.5	0.8	0.7	0.4	0.4
<b>Funded</b>	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Status</b>	Optimized Feasibility Study (2019)	Scoping Study (2021)	Final Investment Decision (DFS Update 2021)	Construction (DFS 2021)	Construction (Revised DFS 2019)	Construction (DFS 2020)	Construction (DFS 2020)	Construction (DFS 2019)
<b>Target Production Start</b>	None	None	2024	2024	2023	2023	2022	2022
<b>NPV Post Tax (\$ mln A\$0.71)</b>	1308	1111	4100	4318	503	1954	400	632
<b>NPV Spodumene Average Price US\$/Ton</b>	892	900	978	1392	900	807	877	750
<b>Discount Rate</b>	10%	8%	8%	8%	8%	10%	8%	8%
<b>Ownership %</b>	87%	100%	45%	100%	100%	75%	100%	100%

Company reports, S&P Global on Mar 22, 2022

### Strength from a new Chinese partner

Firefinch has sold 50% of the Goulamina Lithium Project to Ganfeng Lithium, a US\$28.2 bln vertically integrated lithium company that mines lithium concentrate, processes lithium into lithium hydrochloride, and manufactures lithium batteries for consumer electronics, vehicles, and storage. Ganfeng is providing the capital for the investment in the first phase of production in return for US\$130 mln in equity and is arranging up to US\$120 mln

in third-party debt. Ganfeng has agreed to an offtake agreement for 100% of the mine's production. Ganfeng has paid US\$39 mln into escrow. The final payment of US\$91 mln and escrow release of funds will occur once the mining license is transferred to a Mali subsidiary.<sup>15</sup> Ganfeng brings technology, experience, capital, and potential political support to the project, as China is by far the largest donor country to Mali.

15 <https://www.investi.com.au/api/announcements/ffx/ce78c18f-e08.pdf>

## Ganfeng Lithium Mines

Offtake	Ownership	Total Resource (LCE MT)	Company Name	Location	Type
Yes	100%	0.10	Ningdu Ganfeng	Ganzhou, Jiangxi	Spodumene mining
Yes	50%	2.42	Mount Marion	Australia	Spodumene mining
Yes	6.33%	6.93	Pilbara	Australia	Spodumene mining
Yes	51%	24.58	Cauchari-Olaroz	Argentina	Brine
Yes	89%	5.19	Mariana	Argentina	Brine
Yes	50%	8.82	Sonora	Mexico	Brine

Source: Annual Report 2021 Company Presentation April 2021

Ganfeng owns seven producing lithium mines, which include four of the world's top 10 producing projects.<sup>16</sup> It has experience in hard-rock mining and processing similar to the Goulamina project. As Ganfeng processes a significant portion of the lithium spodumene mined globally, the company understands the quality of the deposit and the mining methods employed at Goulamina.

China dominates investment in Mali and has strong political and economic ties with the country. China has invested around US\$10 bln in Mali over the last 10 years in rail, road, bridges, and university and cultural facilities.<sup>17</sup> For a nation with a GDP of US\$17 bln, this is very significant.<sup>18</sup> China has kept out of domestic politics and has maintained good relations with Mali over many decades. A Chinese partner for Firefinch can build off the political strength of China's political relations with Mali.

### Goulamina: project details

After Ganfeng joined Firefinch in developing Goulamina together they optimized the mine plan to double production and update the Definitive Feasibility Study (DFS) in October 2021. Production increased from 436,000 to 831,000 tonnes spodumene concentrate per year and increasing the project NPV to \$4.1 bln, of which Firefinch owns 45% or \$1.8 bln.

Ganfeng's expertise and experience helped optimize the mine for this increased production, and Ganfeng agreed to fund the increase in capital costs for the first stage, going from US\$194 mln to US\$255 mln. The mine has enough resources to produce for the planned 21 years of production, but only half or about 10 years of production has been proven as reserves. Further drilling is required to convert the resource to reserves for the last 10 years of the mine.

The new mine plan has an increased recovery rate, and we are concerned that it may be difficult to achieve. The rate at which lithium can be converted from ore to spodumene concentrate increased from 77% to 80% in the new plan. Experts we spoke with are skeptical that this improvement, achieved in laboratory, can be replicated in actual production. Our low-case valuation scenario therefore assumes a 10% lower recovery rate of 72%.

### Honesty, for a change

We like that the Firefinch team is up front about what it knows and doesn't know. For example, the higher production estimated in the updated DFS requires 100 mln tonnes of ore. Only half is in the reserve category. Firefinch did not hide this fact and put out a drilling plan for the next two years to prove those resources as reserves prior to publishing an updated DFS.<sup>19</sup> Current project reserves are sufficient to operate the mine for 10 years. The

16 S&P Capital IQ Top Producing Projects 2020

17 <https://northafricapost.com/36870-senegal-announces-plans-to-fast-track-rehabilitation-of-dakar-bamako-railway-connection.html#:~:text=Mali%20has%20signed%20an%20agreement,capital%20Dakar%20and%20landlocked%20Mali,https://www.reuters.com/article/mali-mining-china-idUKL6N0SJ06920141027>

<https://www.globalconstructionreview.com/china-build-major-new-african-railway-m7al7i/>

<https://www.bu.edu/gdp/chinas-overseas-development-finance/>, <https://issafrica.org/iss-today/mali-gives-china-a-reality-check>  
<https://static1.squarespace.com/static/5652847de4b033f56d2bdc29/t/5f689bd284df667bd708c217/1600691154765/PB+48+-+Benabdallah+%26+Large++Dev+Security+China+Role+in+Mali.pdf>

18 <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=ML> and <https://www.worldbank.org/en/country/mali/overview#1>

19 <https://www.investi.com.au/api/announcements/ffx/80747644-76c.pdf>

drilling program to date has been efficient at converting resources to reserve as there is consistent thicknesses and grade making it amenable to simplistic explicit modelling.

One key constraint for the project is that it will eventually require a fleet of 500 trucks to take the concentrate 1,000 km to port. We spoke with a mining executive in the region, who said this should not be a problem, because each of the five major gold mines in the area is supplied by a fleet of around 150 trucks that haul supplies from ports and return to ports empty. The demand for backloads will lower the cost of trucking.

Firefinch is planning to develop the mine in two stages, with the second stage being completed 18 months after the first. Firefinch will use an experienced Australian company, Lycopodium (LYL ASX), for the design and construction of the lithium-processing plant. Lycopodium has experience with design and construction of multiple projects in six West African countries, including the recent B2Gold processing plant at Fekola mine in Mali.<sup>20</sup> Lycopodium also designed and managed construction for a lithium-processing plant for Talison Lithium in Australia.<sup>21</sup>

Firefinch intends to use a hybrid solar/diesel power plant to provide the 25 MW of power required when the processing plant comes online.<sup>22</sup> Other similar projects in Mali have had cost savings of up to 40% when they installed similar hybrid systems.<sup>23</sup> Firefinch has not factored these cost savings into the updated NPV. Power costs are around 10% of costs, and this strategy could therefore see a 4% reduction in production costs. Firefinch is currently installing solar power to support diesel generation at its Morila gold mine.

### **Gold project: Well-understood deposit, cheap brownfield asset.**

We believe the Morila gold project should be valued at \$275 to \$430 mln, based on comparable projects. When Morila commenced operations 20 years ago, it was the low-cost jewel in the crown of Randgold (now Barrick Gold). The mine was acquired by Firefinch for a song, US\$29 mln. Morila has 2.4 mln oz of resources (1 mln oz of reserves) and US\$300 mln in assets; a 4 MTPA ore processing plant, 28 MW power plant, and an established camp.<sup>24</sup> Firefinch was able to restart the mine in six months and return it to annual production of 46,000 oz/year in just over 12 months with minimal capital investment. Allied Gold took 18 months to do the same at the Sadiola mine in Mali.

20 <https://www.lycopodium.com/case-studies/fekola-gold-mine/>

21 <https://www.lycopodium.com/case-studies/chemical-grade-processing-plant-3/>

22 <https://www.investi.com.au/api/announcements/ffx/a19806c7-674.pdf>

23 <https://www.pv-magazine.com/2018/11/26/mali-gold-mine-to-slash-power-bill-with-40-mw-solar-hybrid-plant/>

24 <https://firefinchltd.com/projects/morila-gold-mine/>



Morila Mine Post-Acquisition Mar 11, 2022

Drilling and Prestripping Morila Pit Stage 1

Dewatering since April 2021

Morila Mine Pre-Acquisition (2019)

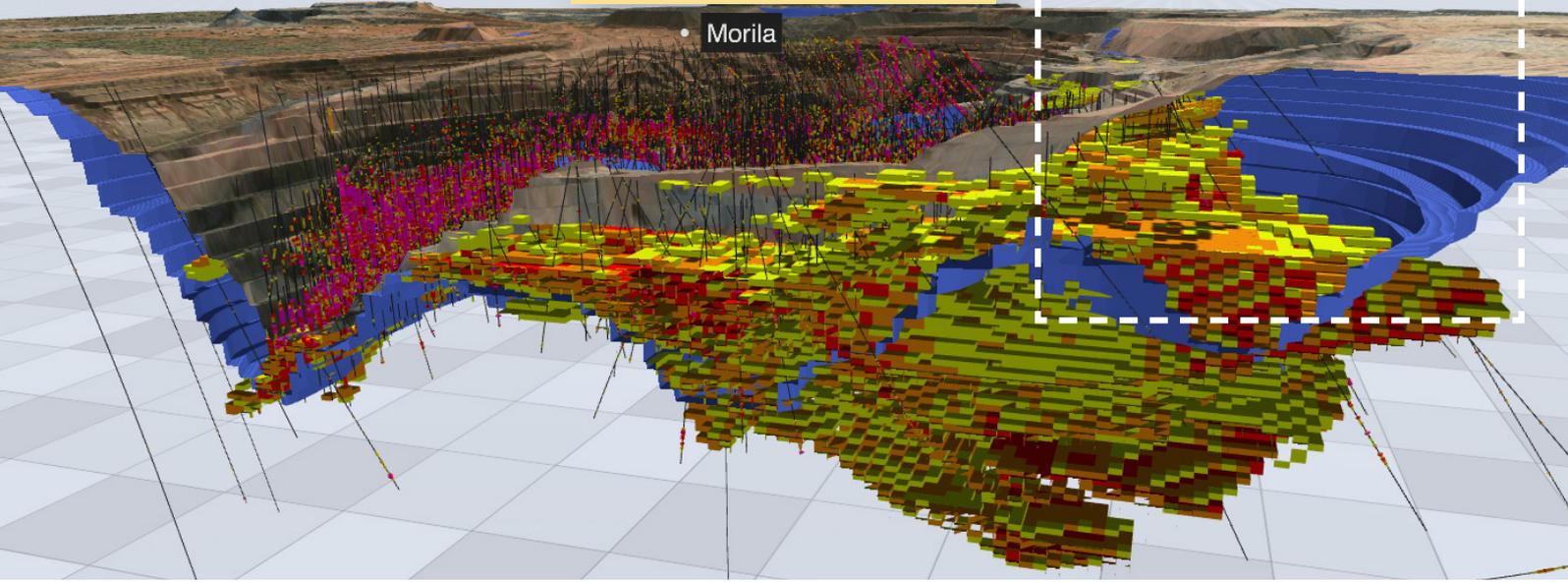
Source: Airbus satellite images

Firefinch's nine-year life-of-mine plan would average 158,000 oz/year and needs investment of just \$80 mln to increase production to 200,000 oz/year. Morila may have its best years behind it, but Firefinch has a low capital-cost strategy to mine a high-cost but well-understood deposit (12,082 drillhole samples), that could continue to produce for a further 20 years. Gold prices have been over

US\$1,800 oz for most of the last 18 months, and Morila's life-of-mine plan uses US\$1,750 as the assumed gold price. With all-in sustaining costs (ASIC) of US\$1,124, the mine can generate good cash flow, providing gold stays at or above current prices.

Most of the ore--83% of reserves--for the Morila

Morila Stage 1 Pit as shown in satellite image detail

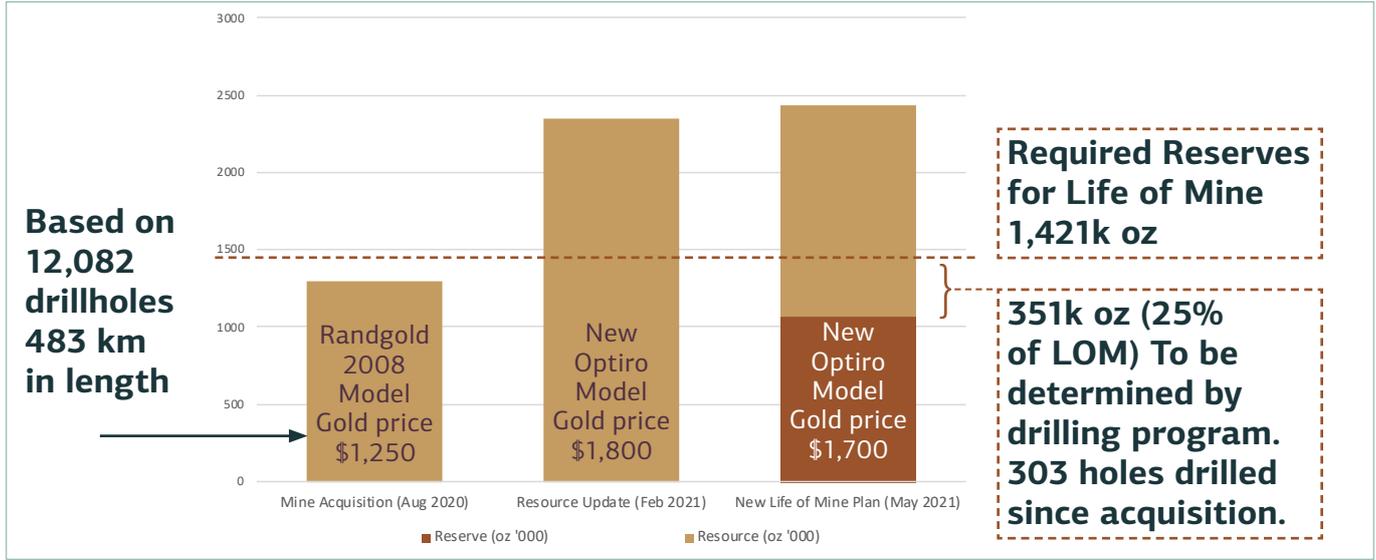


Morila 3D Model Stage 1 Pit: extensive drilling and block model | Source: See the interactive 3D model on the Firefinch website

project comes from the well-understood Morila Pit adjacent to the processing plant, which is being upgraded. This year, most of the mining will be in the distant satellite pits of Viper and Ntiola. Viper and Ntiola are 22-25 km from the processing plant, and the transport cost we estimate is between \$6-\$10 per ton of ore or around \$144 to \$240 per oz gold in additional cost.<sup>25</sup> Given the low head grade

of 1.46 g/t of the ore at Viper and Ntiola, that transport cost eats into the margin. Fortunately, Viper and Ntiola will be feeding the mine for only about 12 months, while the main pit at Morila is pre-stripped for mining later in the year. C1 costs will fall from around US\$1,400/ton down to \$1,000/ton when only the Morila pit is feeding the mine processing plant as the ore grade improves.

**Morila Resources and Reserves: Reserves 25% short of LOM production plan**

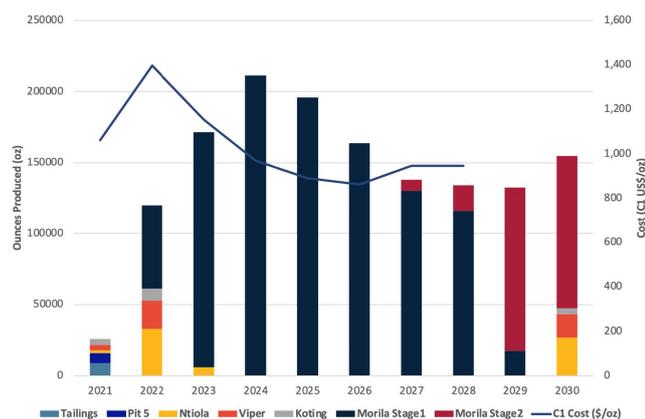


Source: Company Reports

25 Trucking costs in Mali from interviews calculated as ((28.35 grams per oz)/(1.46 grams/ton)\*(recovery rate 0.91))\*\$6 = \$144/oz of transport costs.

We believe the greatest risk to the project is increasing and maintaining production at 200,000 oz/year. Geologists who reviewed the project for us were concerned that the drilling and modelling was insufficient to give confidence the resource will be as good as the company has presented for this project. To be conservative we base our low-end valuation assumptions on achieving average production of 100,000 oz/year for the life of the project which is two-thirds of the production used by the company to value the project.

## Morila Mine Plan



Source: New Life-of-Mine Plan for the Morila Gold Mine, Firefinch, May 2021

## Comparable market valuations

It is difficult to find good comparable assets for Morila. We chose seven gold mines in West Africa to compare to Firefinch's Morila gold project. Our low-end valuation is based on Morila's achieving average annual production of 100,000 oz, and the high end is based on achieving 156,000 oz. Companies like Orezone Gold (ORE TSX) and Tietto (TIE ASX) are trading at higher than \$430 mln and are not yet in production. They have similar production targets but up to half the ASIC costs of Morila. We believe \$275 mln is a reasonable market valuation for Morila based on these comps and on Morila achieving annual production of 100,000 oz. If Morila can achieve its target of 156,000 oz, then we believe it should be valued at \$430 mln.

## PFS financial performance: EML reported vs PFS statutory reporting (\$ mlns)

	J Cap	Euroz Hartleys	Canaccord Genuity	Sprott
<b>Morila Valuation A\$ mln</b>	\$275 to \$430	304	555	558

Source: [Euroz Hartley Nov 29, 2021](#), [Canaccord Genuity Dec 7, 2021](#), [Sprott Nov 25, 2021](#)

## Morila Comps

Company	Hummingbird Resources PLC	Galiano Gold	Resolute Mining	Golden Star	Perseus	Orezone Gold C	Tietto	FireFinch
<b>Ticker</b>	HUM	GAU	RSG	Acquired Jan 28, 2022		Ore	TIE	FFX
<b>Exchange</b>	AIM	TSX	ASX		ASX	TSX	ASX	ASX
<b>Project</b>	Yanfolila	Asanko	Syama, Mako	Wassa	Edikan, Yaoure	Bombore	Abujar	Morila
<b>Location</b>	Mali	Ghana	Mali, Senegal	Ghana	Ghana, Cote d'Ivoire	Burkina Faso	Cote d'Ivoire	Mali
<b>Total Resources (oz '000)</b>	1,929	3860	6910	17,129	4,500	3,894	3,350	2,433
<b>Total Reserves (oz '000)</b>	706	2376	3,317	980	2,933	1,651	1,450	1,309
<b>Reserve Au grade (g/t)</b>	2.57	3.26	2.45	3.44	1.41	0.814	1.31	1.43
<b>Annual Production oz ('000)</b>	87.6	210	316	190	328	133	155	46
<b>ASIC Costs US/t</b>	1,536	1,400	1370	1174	1016	672	838	1124
<b>Life of Mine</b>	7	14	11	6	7	13	11	8
<b>Project Ownership %</b>	80%	45%	80%	90%	90%	90%	89%	80%
<b>Market Cap (\$ mln)</b>	96	192	370	650	2394	532	440	
<b>Production Data</b>	2021	2021	2021	2021	2021	Commence 2022	Commence 2022	2021

Company reports, S&P Global on Mar 22, 2022

## The coup and the sanctions

The first military coup, by Colonel Assimi Goita in August 2020, deposed the elected president. Goita handed power back to an interim civilian-led government and committed to elections within 18 months.<sup>26</sup> The second coup, also led by Goita, was in May 2021. The Economic Community of West African States (ECOWAS), a 15-member nation organization, placed sanctions on Mali after the first coup, lifted them when a timetable to elections was agreed upon, and reimposed them in January 2022 when the junta refused to hold the elections by the February 2022 deadline. The sanctions include the recall of ECOWAS member state ambassadors in Mali; closure of land and air borders; suspension of all commercial and financial transactions except for food products, pharmaceutical products, medical supplies, and equipment, including materials for the control of COVID-19, petroleum products and electricity; freezing of Malian assets in ECOWAS central banks; and the suspension of all financial assistance and transactions.<sup>27</sup> France, the former colonial power in Mali, has also backed the ECOWAS sanctions, and its ambassador was expelled for that reason.

Mining executives we spoke with said the military junta has infiltrated every part of the government, but they are confident that the military is on the road to a good economic recovery, and there will be a return to civilian rule in 12 months. One executive told us that, based on his experience of the 2012 coup, when Mali also faced the Ebola pandemic, the mining industry was protected from the turmoil. He said this is because the mining industry brings the only real tax revenue to the government. In his opinion, it does not matter if it is a civilian or military government; they all want to protect the mining industry. He said when there is a coup, the people at the top are military people but staffers remain the same and have been consistent over the past 10 years. The technical people in the finance, mining, environment, and labor ministries are all very competent and have remained in place. He said sanctions intended to restrict transport of goods across the border are ineffective. He confirmed that one of the major gold mines is receiving deliveries without any interruption. Inbound supplies and exports of gold are all operating normally.

After the ECOWAS sanctions were imposed following the first coup, the CEO of Resolute, Stuart Gale said, “The sanctions . . . and political instability did

not impact production or the safety and security of employees and contractors at Syama, or in Bamako.”

All the major mining companies in Mali, Barrick (GOLD US), B2Gold (BTO TSX), Firefinch (FFX ASX), Resolute (RSG ASX), and Allied Gold, have clearly stated that the latest ECOWAS sanctions have not disrupted operations.

Fraser Institutes Annual Survey of Mining Companies 2020 rates Mali in the top quartile of regions for attractiveness for mining. Mali rates better than some locations in Australia, Canada, and the U.S. for mining attractiveness.

## What we think Firefinch is worth

We use the project NPV of Firefinch’s Goulamina project to value that asset using Firefinch’s 10% lower recovery rate scenario to arrive at a low-end valuation and the full NPV of the project for the high end.

## Firefinch Valuation

	Low	High
<b>Goulamina NPV</b>	\$4,100	\$4,100
<b>Less reduction for 10% lower recovery rate</b>	-\$978	
<b>Adjusted NPV</b>	\$3,122	
<b>Firefinch Share of Goulamina NPV 45%</b>	\$1,405	\$1,845
<b>Morila gold project (Comp valuation)</b>	\$275	\$430
<b>Firefinch Sum of Parts Valuation</b>	\$1,680	\$2,275
<b>Firefinch Current Market Cap</b>	\$990	\$990
<b>Upside %</b>	70%	130%

Company reports, S&P Global on Mar 22, 2022

We use comparable gold projects to arrive at a low-end valuation of \$275 mln for Morila producing at an annual average of 100,000 ounces based on current project reserves and \$430 mln if they can prove the resources into reserves through the drilling program and achieve an average production of 156,000 ounces.

Summing the parts, we arrive at a low-end valuation of Firefinch at \$1,680 mln and high end of \$2,275. With the current market cap at \$990 mln the upside is between 70% and 130%. We are normally skeptical of sum-of-the-parts valuations, but in the case of Firefinch, we believe it is appropriate

26 <https://theglobalobservatory.org/2022/02/ecowas-sanctions-against-mali-necessary-but-may-be-counter-productive/>

27 <https://www.ecowas.int/wp-content/uploads/2022/01/Final-Communique-on-Summit-on-Mali-Eng-080122.pdf>

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as Goulamina will soon be spun out into Leo Lithium.

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