



# FIREFINCH

## GOULAMINA DFS UPDATE

**ASX: FFX**

December 2021



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## ORE RESERVE AND MINERAL RESOURCE ESTIMATES

Firefinch confirms that it is not aware of any new information or data that materially affects the Mineral Resources at Goulamina and Morila and the production estimates for Goulamina. The Company also confirms that all material assumptions and parameters underpinning the Mineral Resource estimates and production estimates continue to apply and have not materially changed.

Please refer to ASX Announcements of 8th July 2020 and 20th October 2020 (Goulamina), 8th February 2021 (Morila Resource), 7th September 2020 and 28th April 2021 (Morila Tailings), 24th November 2020, 3rd May 2021 and 10th August 2021 (N'Tiola, Viper, Domba, Koting, Morila Pit 5), and 5th May 2021, 6th July 2021 and 29th July 2021 (Morila Gold Production, Ore Reserves and Production Targets).

The announcements mentioned above are available at <https://firefinchltd.com/asx-announcements/> or [www.asx.com.au](http://www.asx.com.au).

## ASX RELEASES

Investors are advised that by their nature as visual aids, presentations provide information in summary form. The key information on the company and its projects can be found in the ASX releases:

- \$70 Million Capital Raising for Acquisition of Morila Gold Mine (9 September 2020),
- Mali Lithium to Become a Gold Producer by Acquiring the Morila Gold Mine in Mali (31 August 2020),
- Corporate Update (7 October 2020),
- Morila - Tailings Resource and Production Target (7 September 2020),
- Substantial Increase to Goulamina Mineral Resource (8 July 2020).
- Goulamina Project Definitive Feasibility Study (20 October 2020)

# IMPORTANT NOTICES

- Goulamina Lithium Project Definitive Feasibility Study (20 October 2020)
- Completion of A\$74 Million Capital Raising (28 October 2020)
- Acquisition of Morila Completed (11 November 2020)
- Satellite Pit Resources Update (24 November 2020)
- December 2020 Quarter Gold Production (8 January 2021)
- Morila Resource Update (8 February 2021)
- Update to ASX release on Morila Resource (9 February 2021)
- Intention to Demerge Goulamina (9 February 2021)
- Quarterly Activities Report incl. Production Guidance (28 April 2021)
- Satellite Pit Resources Update (3 May 2021)
- Life of Mine Plan (5 May 2021)
- Pit 5 Delivers More High-Grade Gold Results (1 June 2021)
- Firefinch and Ganfeng to jointly develop the Goulamina Lithium Project; Ganfeng to provide up to US\$194 million of funding (16 June 2021)
- June Quarter Gold Production (6 July 2021)
- Morila Super Pit - First Production Blast Since 2015 (14 July 2021)
- Progress Update on Ganfeng Joint Venture to Develop the Goulamina (2 August 2021)
- Further Viper Results and Commencement of Mining (10 August 2021)
- Introducing Leo Lithium - The Next Global Lithium Producer (16 August 2021)
- Appointment of New CFO and New Company Secretary (23 August 2021)
- Ganfeng Shareholder Approval Received (1 September 2021)
- Appointment of Leo Lithium Managing Director (29 September 2021)
- Malian Government Approval Received for Goulamina (30 September 2021)
- Goulamina – Progressing a World Class Lithium Project (20 October 2021)
- Morila Operations and Drilling Update (22 October 2021)
- Share Purchase Plan to Raise \$25 million (25 October 2021)
- Goulamina Definitive Study Update (6 December 2021)

The Company confirms it is not aware of any new information that materially affects the information included in any ASX market announcement.

## FORWARD LOOKING AND CAUTIONARY STATEMENTS

This announcement contains “forward-looking information” that is based on the Company’s expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the pre-feasibility and feasibility studies, the Company’s business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral resources, results of exploration and relations expenses.

Persons reading this presentation are cautioned that such statements are only predictions, and that the Company’s actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company’s actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information. Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current exploration activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of lithium, gold and other metals; possible variations of ore grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the mining industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward-looking information.

These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information. Past performance should not be relied upon as being indicative of future performance. The Company disclaims any intent or obligations to revise any forward-looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law. Statements regarding plans with respect to the Company’s mineral properties may contain forward-looking statements in relation to future matters that can be only made where the Company has a reasonable basis for making those statements. Competent Person Statements regarding plans with respect to the Company’s mineral properties are forward looking statements. There can be no assurance that the Company’s plans for development of its mineral properties will proceed as expected. There can be no assurance that the Company will be able to confirm the presence of mineral deposits, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of the Company’s mineral properties.

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# FIREFINCH'S STRATEGIC VISION



## Gold Business

**The revival of one of West Africa's great gold mines, Morila**

### ***Achieve targeted gold production increases at Morila***

- Mine nearby satellite pits to produce over 45koz pa in 2021
- Ramp-up to above 100koz in 2022
- Rapidly grow production to 150-200koz

### ***Deliver exploration and Resource development***

- Explore near mine and regional targets
- Define underground potential at Morila



## Lithium Business

**Goulamina expected to be amongst the world's largest spodumene projects<sup>1</sup>**

### ***Demerger of Goulamina to form Leo Lithium***

- Targeted listing of Leo on the ASX in early Q2 2022, in parallel with an Entitlement Offer to Firefinch shareholders<sup>2</sup>
- Eligible Firefinch Shareholders to receive an interest in Leo via an in-specie distribution at no cost<sup>3</sup>

### ***Develop a world-class lithium project***

- New study outlines annualised spodumene concentrate production of 506ktpa increasing to a peak of 880ktpa<sup>4</sup>
- A\$4.1bn post-tax NPV and post-tax real IRR of 83%
- Project being developed in partnership with Ganfeng, the world's largest lithium chemicals producer by capacity

1. Stage 2 (4Mtpa) first 5 year steady state production is 831ktpa; 2. Subject to Firefinch shareholder approval and any other necessary rulings or approvals;

3 Eligible Firefinch Shareholders with a registered address in Australia, New Zealand or a qualifying jurisdiction with the aim of being as inclusive as practical. 4. Refer slide 9 for Listing Rule 5.16 information and cautionary statement

# 1

## Goulamina DFS Update



# GOULAMINA DFS UPDATE

- Following Ganfeng and Firefinch agreeing to form an incorporated joint venture to develop Goulamina (**Goulamina JV**), both companies have been **jointly working to update the October 2020 Definitive Feasibility Study (DFS Update)**
- The DFS Update **satisfies the financial outcomes required for a positive Final Investment Decision (FID)** by outlining a post-tax ungeared real IRR greater than 15% (returned 83%)
- Firefinch and Ganfeng will now **formally progress Board approvals to confirm FID**
- DFS Update **revised the project base case to include a Stage 2 expansion from 2.3Mtpa to 4.0Mtpa**, which is expected to come online 18 months post commissioning of Stage 1
- The study revised engineering design, flowsheet and metallurgical testwork to DFS standard with additional targeted production (Stage 2) determined at Pre-Feasibility standard

## PROJECT LOCATION



## DFS EXPERTS ENGAGED<sup>1</sup>

Leads	 FIREFINCH	
Mining	 CUBE GROUP  Majesso Consulting	Tailings  Land & Marine Geological Services
Processing	 GanfengLithium  Lycopodium	Capital 
Test work	 NAGROM the mineral processor	Geotech <i>Peter O'Bryan and Associates</i>
Hydrology & Hydrogeology	 AQ2 TECHNOLOGIES	Operating costs 

# GOULAMINA CONFIRMED AS A TIER 1 LITHIUM DEVELOPMENT PROJECT



**831ktpa<sup>1</sup>**

**6% concentrate production (dry)**

Stage 2 expansion places Goulamina as a leading spodumene producer, with peak production reaching 880ktpa



**80%**

**Recovery**

Ganfeng's locked cycle test work has delivered a 3% increase to recovery, with 80% being one of the highest in the sector



**US\$312/t**

**Cash cost (LOM, dry)**

Competitive cash cost for robust cash flow throughout the lithium cycle



**A\$4.1bn**

**Post-tax real NPV<sub>8%</sub>**

Outstanding returns with significant improvements to NPV (A\$1.7bn in 2020 October DFS)



**83%**

**Post-tax ungeared real IRR**

Satisfies financial outcomes required for a positive FID



**US\$391/t**

**Capital intensity**

Goulamina capital intensity among the lowest globally<sup>2</sup>

# GOULAMINA LITHIUM PROJECT KEY METRICS

**Goulamina confirmed among the world's largest, highest quality lithium projects**

<b>Mineral Resource</b>	108.5Mt at 1.45% Li <sub>2</sub> O
<b>Mine Life</b>	21 years minimum <sup>1</sup>
<b>Ore Reserves (Proven &amp; Probable)</b>	52Mt at 1.51% Li <sub>2</sub> O
<b>Life of Mine Production (spodumene concentrate)</b>	15.6Mt
<b>Spodumene Concentrate Production (Stage 1)</b>	506ktpa
<b>Spodumene Concentrate Production (Stage 2)</b>	831ktpa <sup>2</sup>
<b>Average Spodumene Concentrate Production</b>	726ktpa
<b>Concentrate Specifications</b>	6% Li <sub>2</sub> O, <0.6% Fe <sub>2</sub> O <sub>3</sub> , low mica
<b>Annual Mine Throughput</b>	2.3 rising to 4.0Mt
<b>Pre-tax NPV<sub>8%</sub></b>	A\$5.6bn (US\$4.0bn)
<b>Pre-tax IRR</b>	98%
<b>Post-tax NPV<sub>8%</sub></b>	A\$4.1bn (US\$2.9bn)
<b>Post-tax IRR</b>	83%
<b>Capital Cost (Stage 1)</b>	US\$255 million
<b>Capital Cost (Stage 2, incremental)</b>	US\$70 million
<b>Cash Costs (Life Of Mine)</b>	US\$312 per tonne concentrate
<b>AISC (Life of Mine)</b>	US\$365 per tonne concentrate



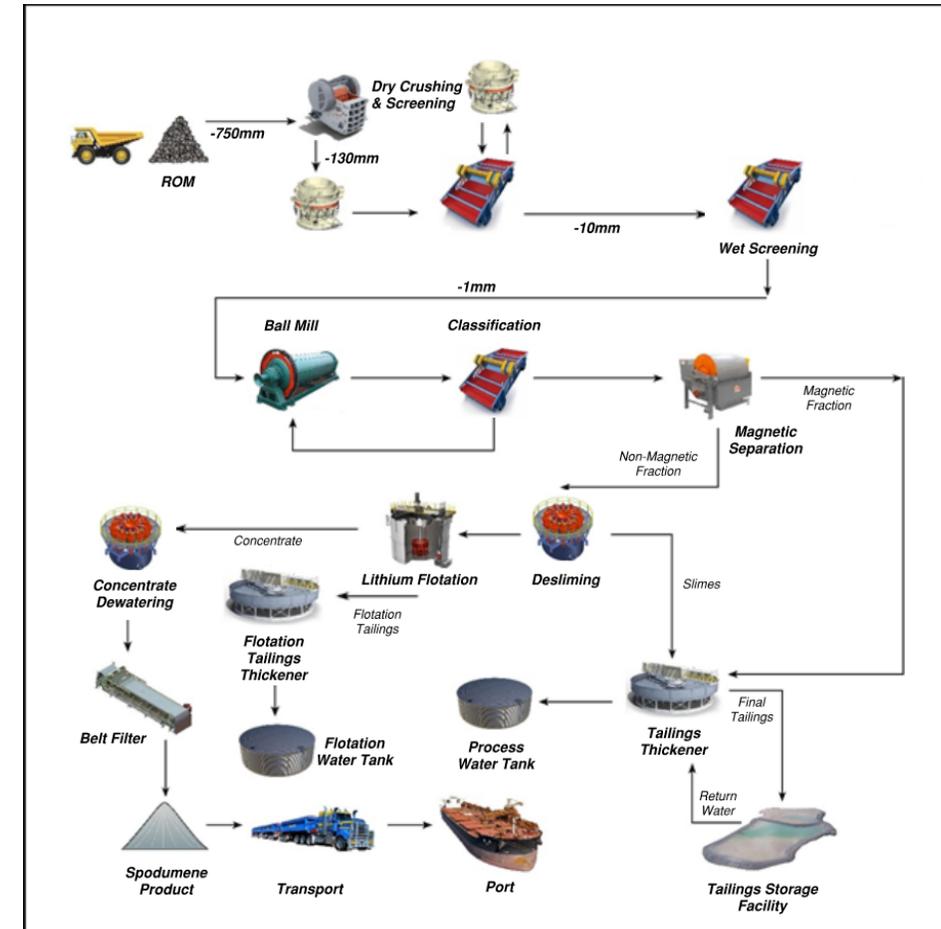
Cautionary Statement: The production inventory and forecast financial information referred to in the Stage 2 case comprises Proven Ore Reserves (9.9%), Probable Ore Reserves (53.6%) and Inferred Mineral Resources (36.5%). The Inferred Mineral Resource included in the inventory is 30 million tonnes at 1.3% Li<sub>2</sub>O. The Inferred Mineral Resource has been scheduled on a preliminary basis with all Inferred material mined after the Ore Reserves. The Inferred Mineral Resource does not have a material effect on the technical and economic viability of the Project. There is a lower level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised. Note: All dollar figures are in real terms; 2. Based on Stage 2 steady state production (first 5 years).

# PROCESS SELECTION AND TESTWORK

## PROCESSING AND TESTWORK UPDATE

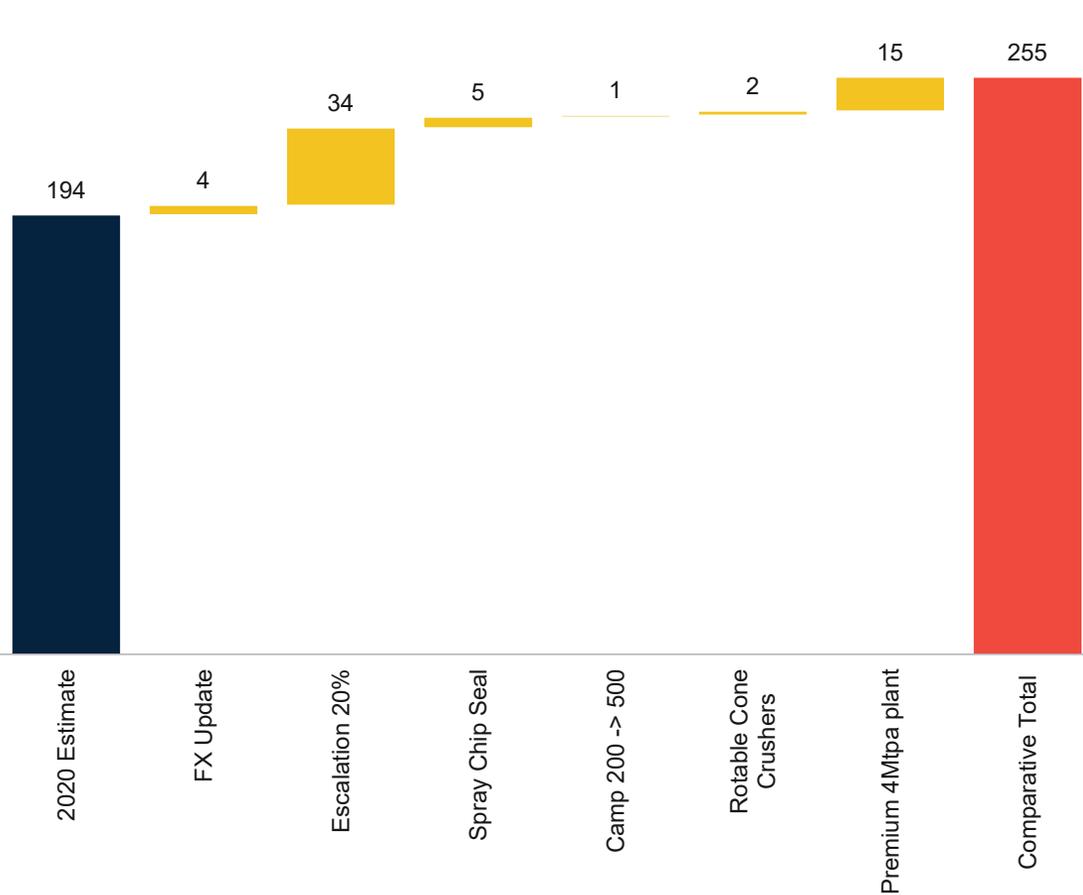
- Firefinch has worked collaboratively with Ganfeng to produce a **revised process flowsheet to facilitate an increase in plant throughput from 2.3Mtpa to 4.0Mtpa**
- The revised flowsheet included the following key updates to the October 2020 DFS
  - Two-stage crushing circuit and High-Pressure Grinding Roll crusher (HPGR) replaced with a **three-stage conventional crushing circuit**
  - **Stack Sizer screens added to circuit**, replacing hydrocyclones
  - **Magnetic separation circuit modified** to a proven flowsheet based on experience of Ganfeng, the world's largest lithium chemical producer by production capacity
- Ganfeng has also undertaken a testwork program that has verified the changes to the process flow sheets
  - Recoveries in locked cycle testwork have matched or exceeded the original DFS testwork and **predicted recoveries have increased from 77% to 80%**
  - Ganfeng has **successfully converted Goulamina's spodumene into battery grade lithium hydroxide** (min 99.5% Li<sub>2</sub>O purity)

## SIMPLIFIED PROCESS FLOW DESIGN

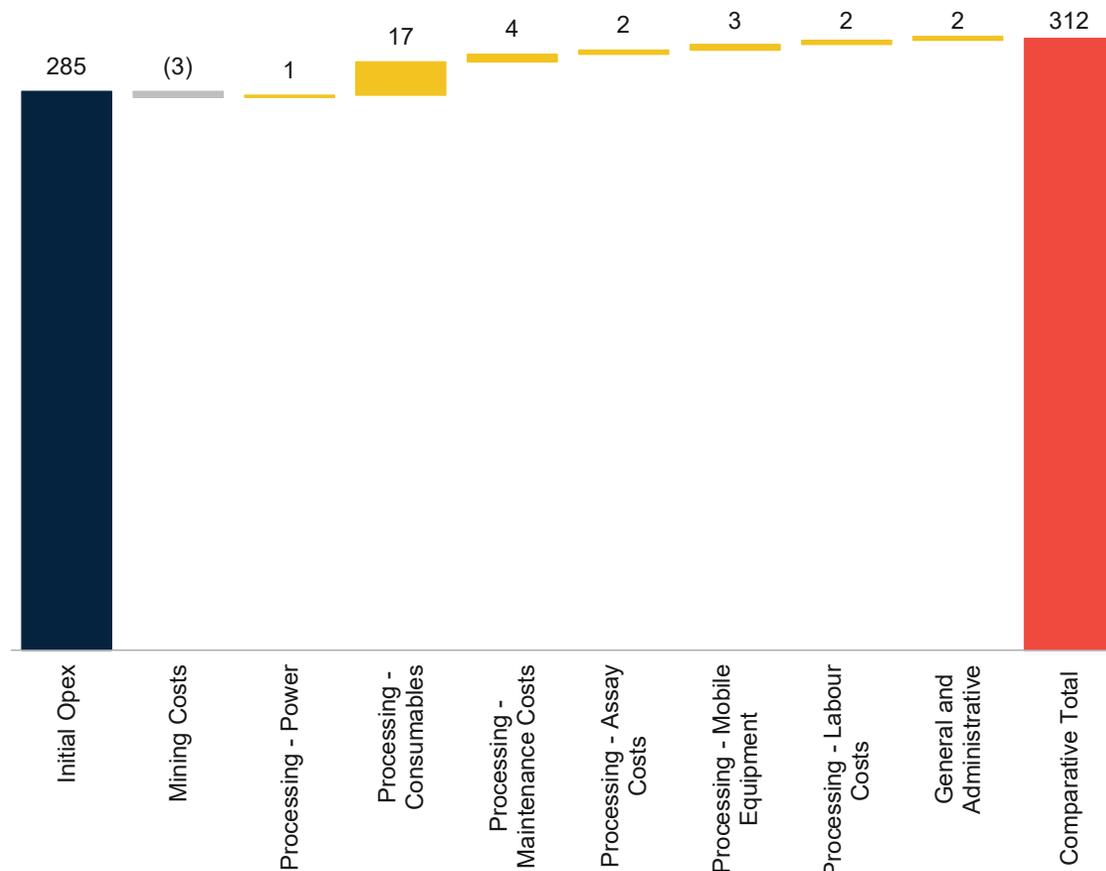


# DFS vs DFS Update: Capex and Opex

## CAPITAL COST UPDATE (US\$m)



## OPERATING COST UPDATE (US\$/t)



# 2

## Goulamina Highlights



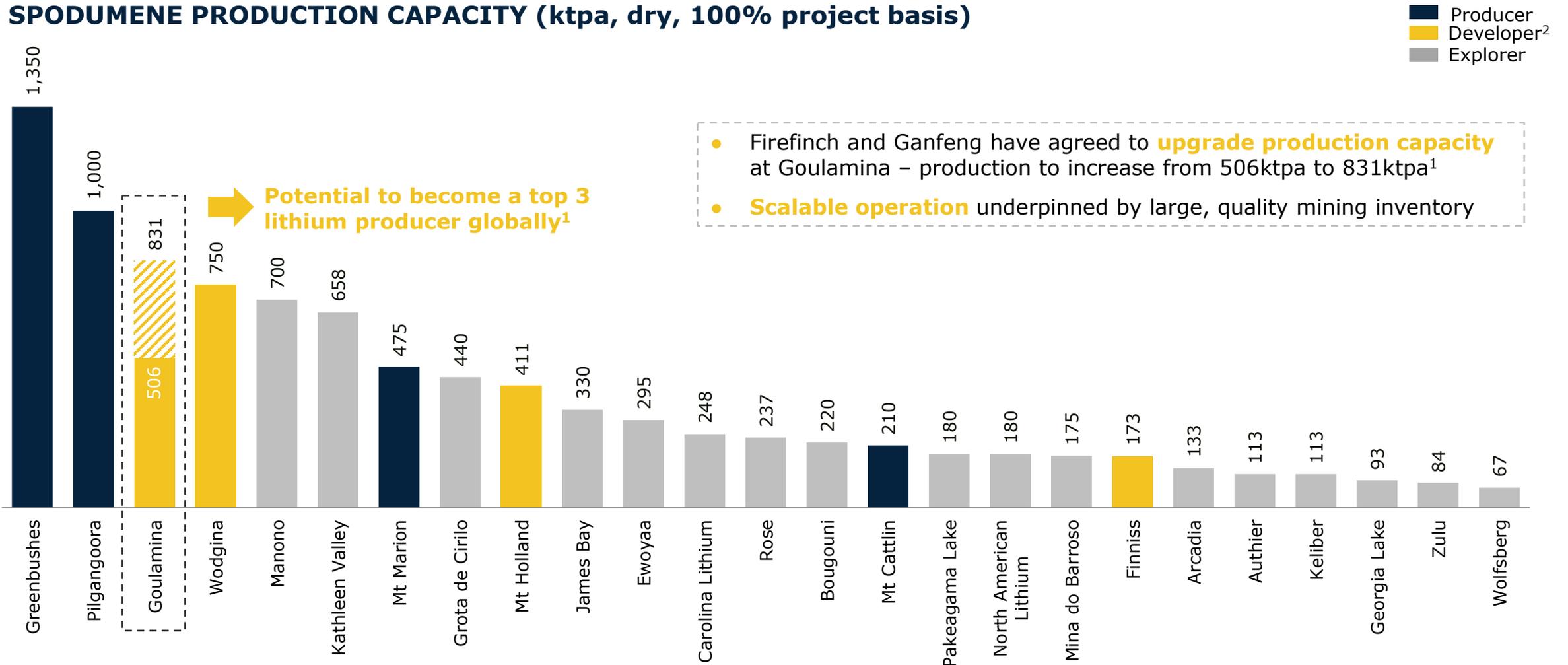
# GOULAMINA HIGHLIGHTS

1	<b>Globally significant producer</b> 	Annual spodumene concentrate production of 506ktpa increasing up to 831ktpa <sup>1</sup> positions Goulamina amongst the world's largest spodumene projects
2	<b>Development ready</b> 	Goulamina is <b>one of the few projects globally which is development-ready</b> with FID expected to occur by the end of CY21 and targeting first production in early 2024
3	<b>Tier 1 orebody</b> 	<b>World-class, high grade hard rock lithium deposit with a Mineral Resource of 109Mt at 1.45% Li<sub>2</sub>O</b> (3.9Mt LCE) and <b>Ore Reserve of 52Mt at 1.51% Li<sub>2</sub>O</b> (1.9Mt LCE). Drilling is underway targeting increases to the current resources and reserves.
4	<b>Quality product</b> 	<b>High quality concentrate with test work validating 6%+ Li<sub>2</sub>O</b> with low impurities and having been <b>successfully converted to a battery grade lithium hydroxide</b> (min 99.5% Li <sub>2</sub> O purity)
5	<b>Social license to operate</b> 	<b>Existing in-country expertise and relationships</b> with the Malian government developed through Firefinch's operations at the Morila Gold Mine which employs over 1,300 locals
6	<b>World-class partner</b> 	<b>Project being developed in 50/50 partnership with Ganfeng</b> , the world's largest lithium chemical producer by production capacity, providing funding, offtake and operational support to de-risk development

1. Based on first 5 years of steady state Stage 2 production.

# 1 GLOBALLY SIGNIFICANT PRODUCER

**SPODUMENE PRODUCTION CAPACITY (ktpa, dry, 100% project basis)**



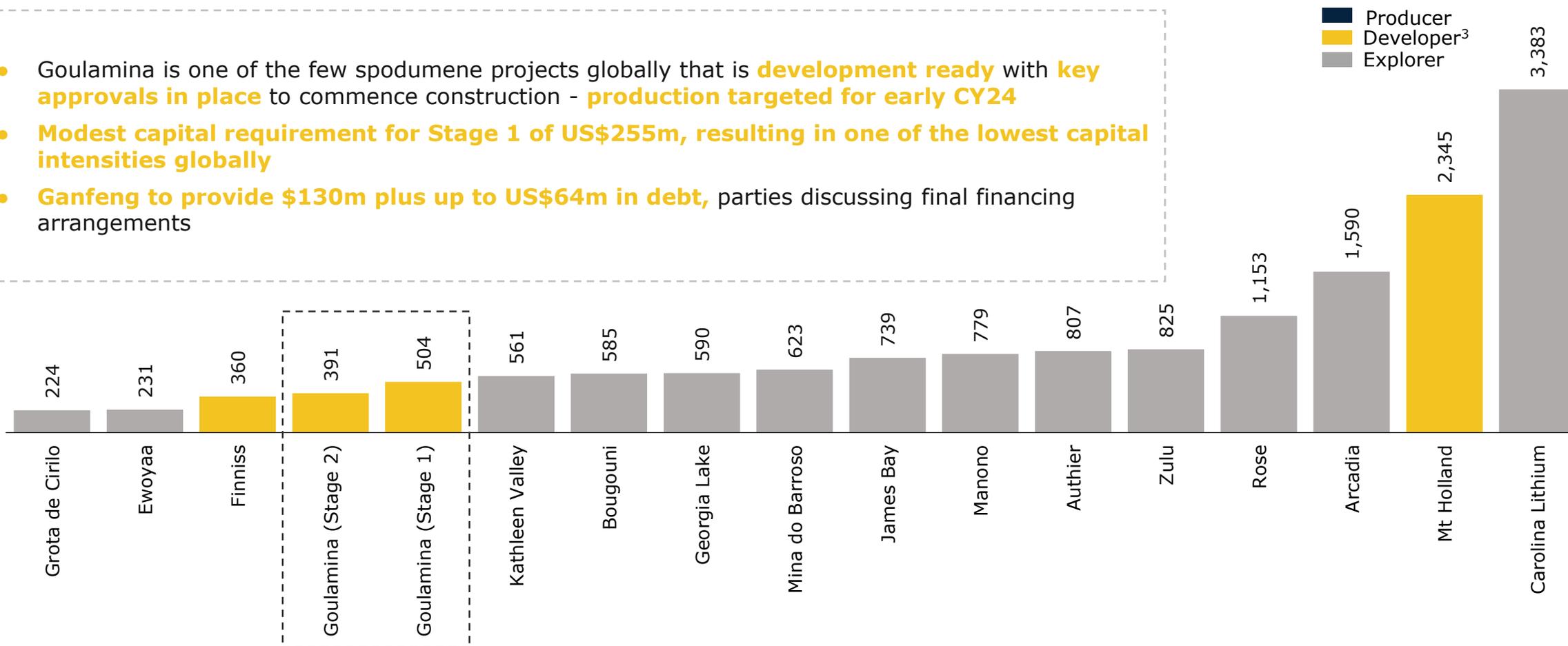
1. Based on Goulamina's expanded production capacity of 831ktpa based on first 5 year steady state production from Stage 2 (4.0Mtpa). Refer to Appendix D for further information;

2. Final Investment Decision announced; Source: Public ASX Announcements.

# 2 DEVELOPMENT READY

## CAPITAL INTENSITY (US\$/TPA)<sup>1</sup>

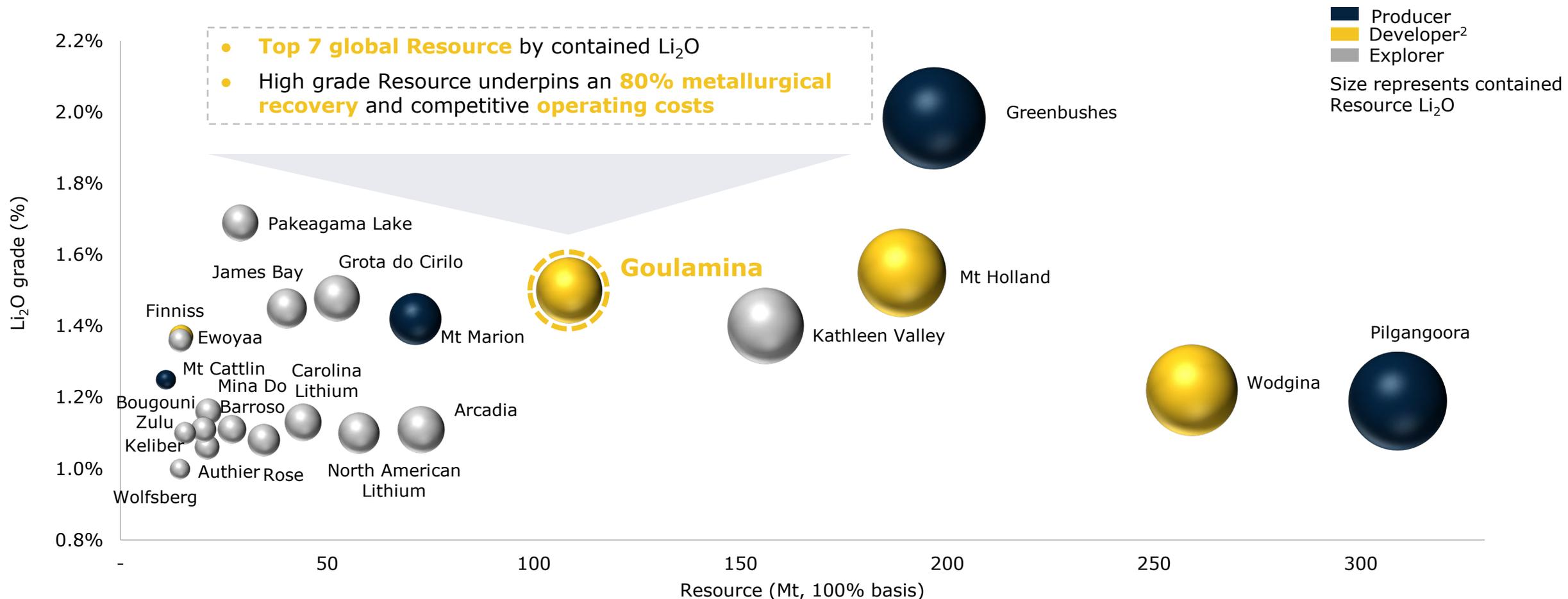
- Goulamina is one of the few spodumene projects globally that is **development ready** with **key approvals in place** to commence construction - **production targeted for early CY24**
- **Modest capital requirement for Stage 1 of US\$255m, resulting in one of the lowest capital intensities globally**
- **Ganfeng to provide \$130m plus up to US\$64m in debt**, parties discussing final financing arrangements



Source: Public ASX Announcements (refer to Appendix D for further information); 1. All capital cost figures are converted to USD at the exchange rate in the relevant feasibility study. Goulamina Stage 1 capital intensity calculated as Stage 1 capex of US\$255m divided by Stage 1 production capacity of 506ktpa. Stage 2 capital intensity calculated as Stage 1+2 capex of US\$325m divided by Stage 2 production capacity of 831ktpa; 2. Ganfeng US\$130m investment plus US\$40 - 64m in debt resulting in total sources of US\$174 - 194m relative to total Stage 1 capital requirement of US\$255m based on the first 5 years of Stage 2 steady state production; 3. Final Investment Decision announced.

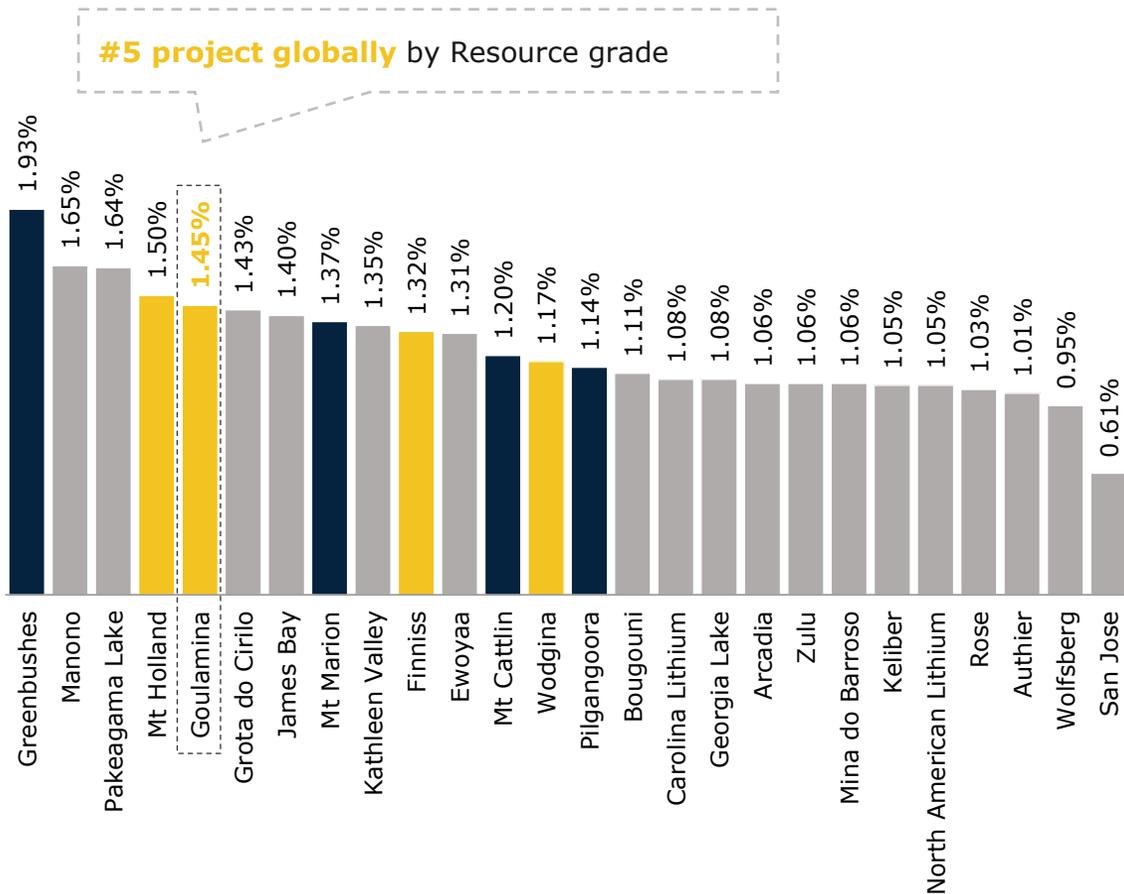
# 3 TIER-1 OREBODY

## RESOURCE & RESOURCE GRADE<sup>1</sup>

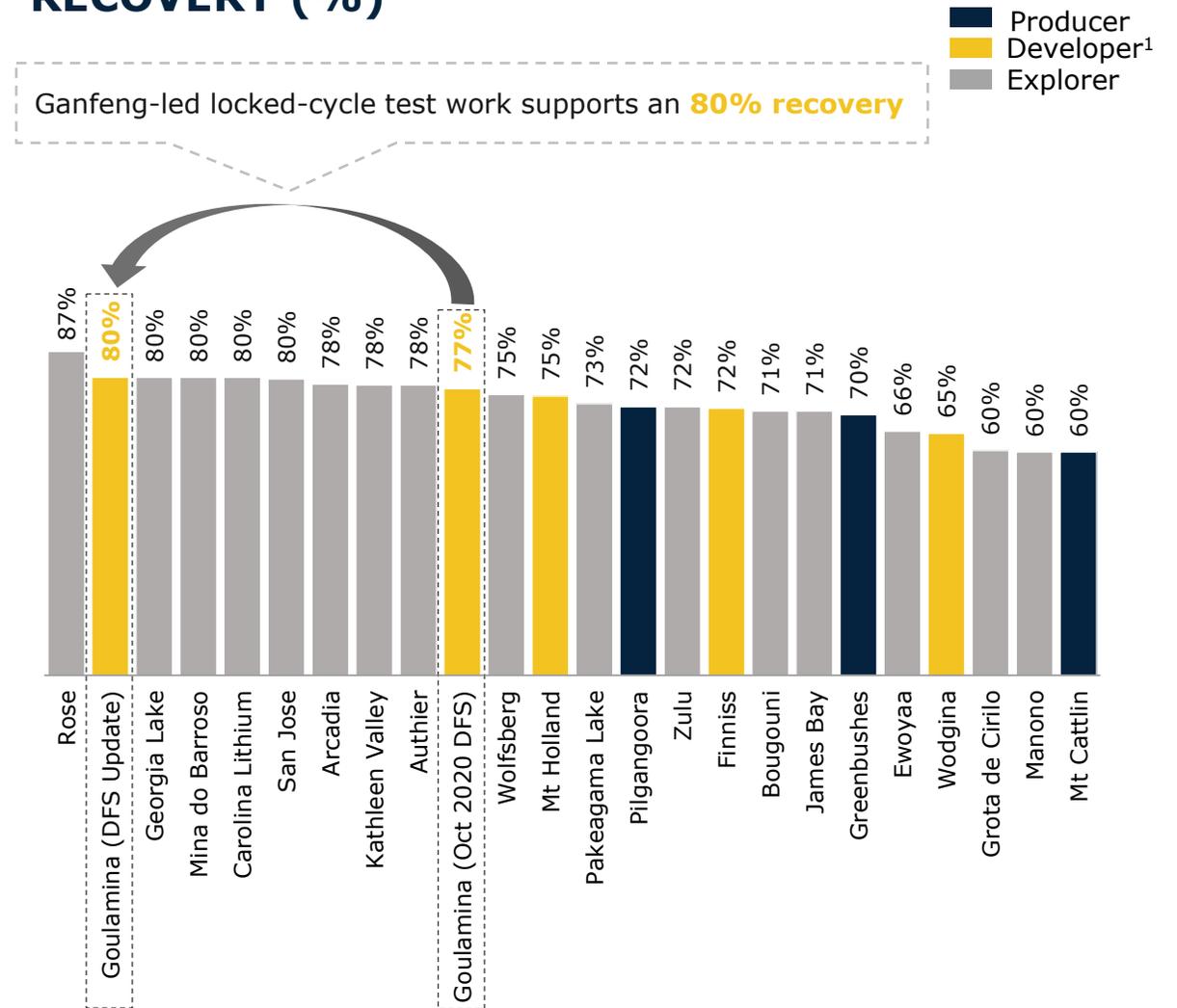


# 4 QUALITY PRODUCT

## RESOURCE GRADE (% Li<sub>2</sub>O)



## RECOVERY (%)



Source: Public ASX Announcements (refer to Appendix D for further information); 1. Final Investment Decision announced.

# 5 SOCIAL LICENCE TO OPERATE

## FIREFINCH'S SOCIAL LICENCE

- 

**Strong partnerships and networks in-country and in wider West Africa**
- 

**Dedicated in-country presence** to manage and operate Morila and develop Goulamina
- 

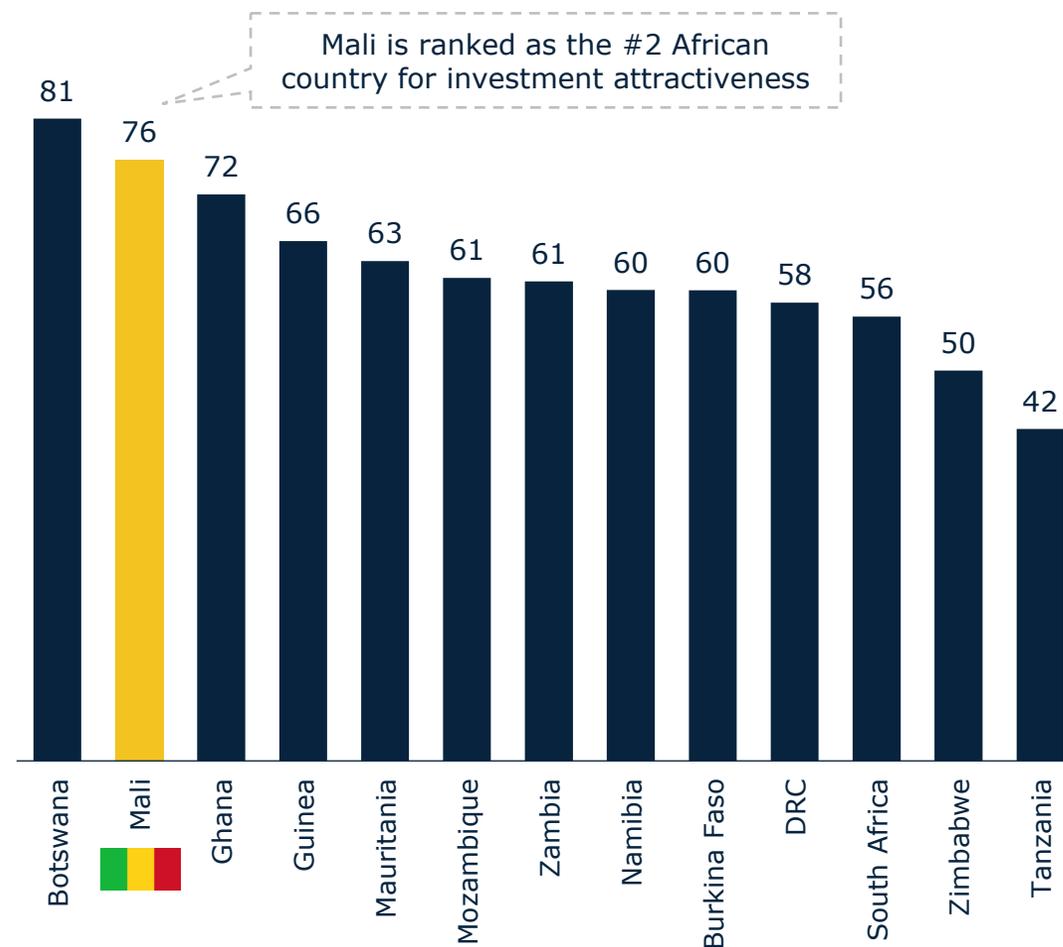
**Strong local employer** with approximately 1,400 employees including contractors, 97% are Malian people
- 

**Mali is Africa's third largest gold producer** and has one of the world's most mining-dependent economies
- 

Clear pathway for Mali to host the **first spodumene concentrate project in West Africa**
- 

Commitment to **comply with industry best practice in community and social engagement**

## INVESTMENT ATTRACTIVENESS SCORE<sup>1</sup>



1. Fraser Institute 2020, noting this was prior to the Mali coup d'état.

# 6 WORLD-CLASS PARTNER

Life of mine offtake secured with a leading Lithium chemical producer, which supplies tier 1 battery makers and OEMs

## GANFENG HIGHLIGHTS

Non-SOE Chinese lithium chemical producer with a market capitalisation of ~US\$35bn

World number one lithium chemical producer by production capacity

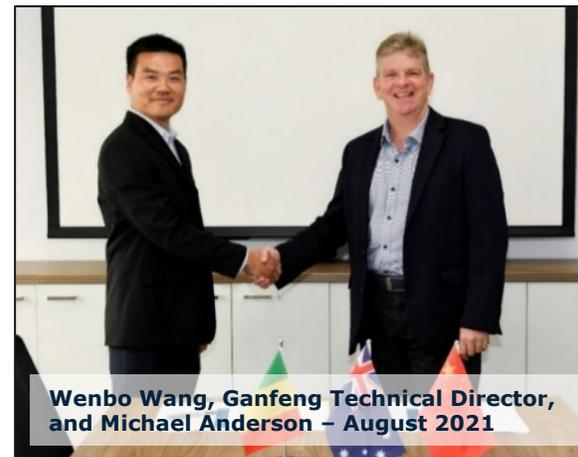
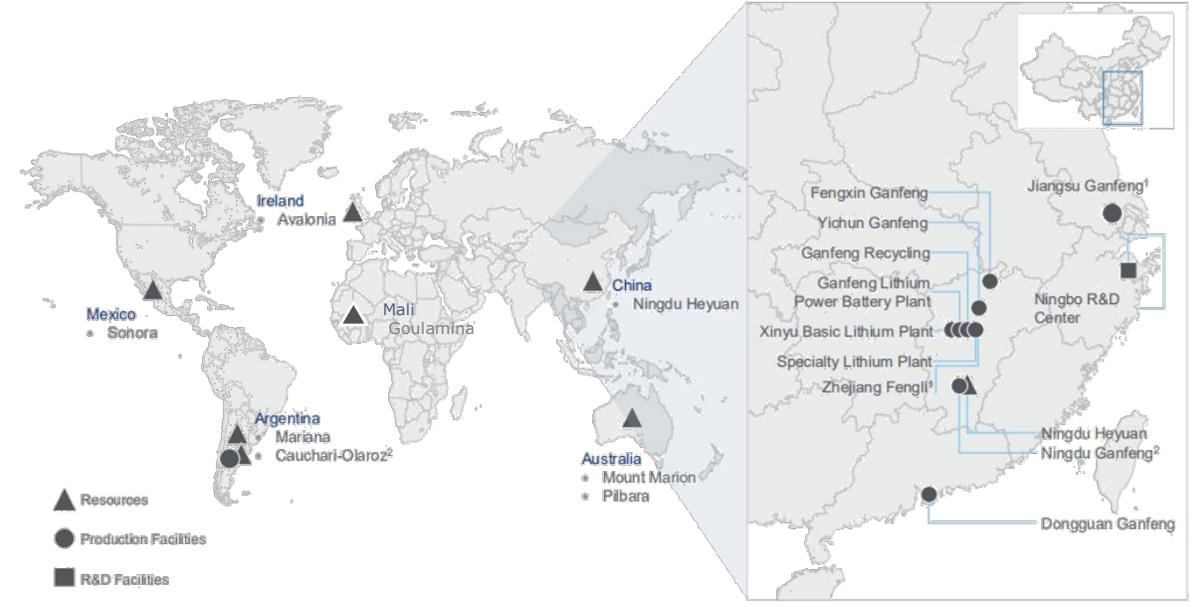
Supplier to major tier 1 lithium battery producers and OEMs

Diversified upstream lithium portfolio with 9 investments/offtake projects spanning the globe

Targeting 200ktpa LCE supply capacity by 2025 with a long-term target capacity of 600kt (20% market share)

Proven track record supporting and investing in lithium operations, including the Mt Marion Lithium Mine in Australia

## GANFENG'S LITHIUM OPERATIONS



# 3

## Corporate update



# GANFENG JV TRANSACTION UPDATE

## EXPECTED TRANSACTION TIMETABLE

Ganfeng shareholder approvals	✓
Mali Government approval	✓
Chinese regulatory approvals received	✓
Ganfeng US\$39m received to escrow account	✓
Goulamina Final Investment Decision	By end CY21 <sup>1</sup>
Ganfeng US\$91m received to escrow account	By end CY21
Corporate restructuring to facilitate JV	Q1 2022
Ganfeng US\$130m released from escrow	Q1 2022
Ganfeng debt received	Q2 2022

## TRANSACTION PROGRESSING TO PLAN

- All Chinese regulatory approvals now received along with the support of the Mali Government
- Ganfeng has deposited the first US\$39m of its Goulamina investment into an escrow account with the final US\$91m expected by end of CY21
- Corporate restructuring underway to facilitate separation of Firefinch’s lithium and gold businesses and establish the JV, which is expected to complete in early Q1 2022
- Funds to be released from escrow following the completion of the corporate restructure
- The JV partners have agreed to a major drilling programme targeting the expansion of the Resource base. Almost 50kms of drilling is planned over the next two years

1. Based on Firefinch’s and Ganfeng’s respective Board approvals. FID will be formally approved by the Goulamina JV once the corporate restructuring completes in early Q1 2022

# LEO LITHIUM DEMERGER ON TRACK

## DEMERGER TIMETABLE

Lodge Demerger Short Form Prospectus & Notice of Meeting	Q1 2022
Shareholder vote on demerger	Q1 2022
Demerger implementation	Q1 2022
Lodge Entitlement Offer Long Form Prospectus	Q1 2022
ASX listing of Leo Lithium	Early Q2 2022

## LEO LITHIUM DEMERGER

- Eligible Firefinch shareholders<sup>1</sup> will receive an in-specie distribution of Leo shares at no cost as part of the demerger
- Firefinch to retain up to 20% of Leo Lithium shares following the demerger
- Targeting listing of Leo Lithium on ASX by early Q2 2022, in parallel with an Entitlement Offer to existing Firefinch shareholders
  - Proceeds expected to be used to fund working capital, demerger costs and permit flexibility to accelerate expenditure at Goulamina
- Management and Board of Leo Lithium are being recruited, with the recent appointment of Simon Hay (ex Galaxy) as Managing Director

1. Eligible Firefinch Shareholders with a registered address in Australia, New Zealand or a qualifying jurisdiction with the aim of being as inclusive as practical.

# KEY TAKEAWAYS

## MORILA GOLD MINE



World-class ex-AngloGold/Barrick Gold Mine with a 20-year / 7.5Moz operating history



Transitioning from a 40koz pa tailings retreatment operation to 150 – 200koz pa gold producer



Significant upside through exploration



Morila gold pour

## GOULAMINA LITHIUM PROJECT



Updated Definitive Feasibility Study supports the Final Investment Decision for Goulamina



Goulamina expected to be the next large scale spodumene concentrate operation supplying to a Tier 1 offtaker



Paves the way to demerge Goulamina into its own ASX-listed vehicle to form Leo Lithium (ASX:LLL) by early Q2 2022



Goulamina core

# A

APPENDIX

## Supporting information



# SNAPSHOT OF FIREFINCH



Shares on Issue<sup>1</sup>

**1,026.9M**

Mineral Resource<sup>2</sup>

**2.43Moz Au**  
**1.57Mt Li<sub>2</sub>O**

Share Price<sup>1</sup>

**A\$0.81**

Market Cap<sup>1</sup>

**A\$832M**

Top 20 Shareholders

**40%**

Board Ownership

**2.5%**

Net Cash<sup>3</sup>

**A\$68.4M**

Debt<sup>4</sup>

**No Debt**

Research Coverage

Sprott      Euroz-Hartleys  
Canaccord      Petra Capital



Share Price Performance (12 mth)

**Low:** \$0.13

**High<sup>5</sup>:** \$0.835

**Daily Avg Vol:** 8.5m

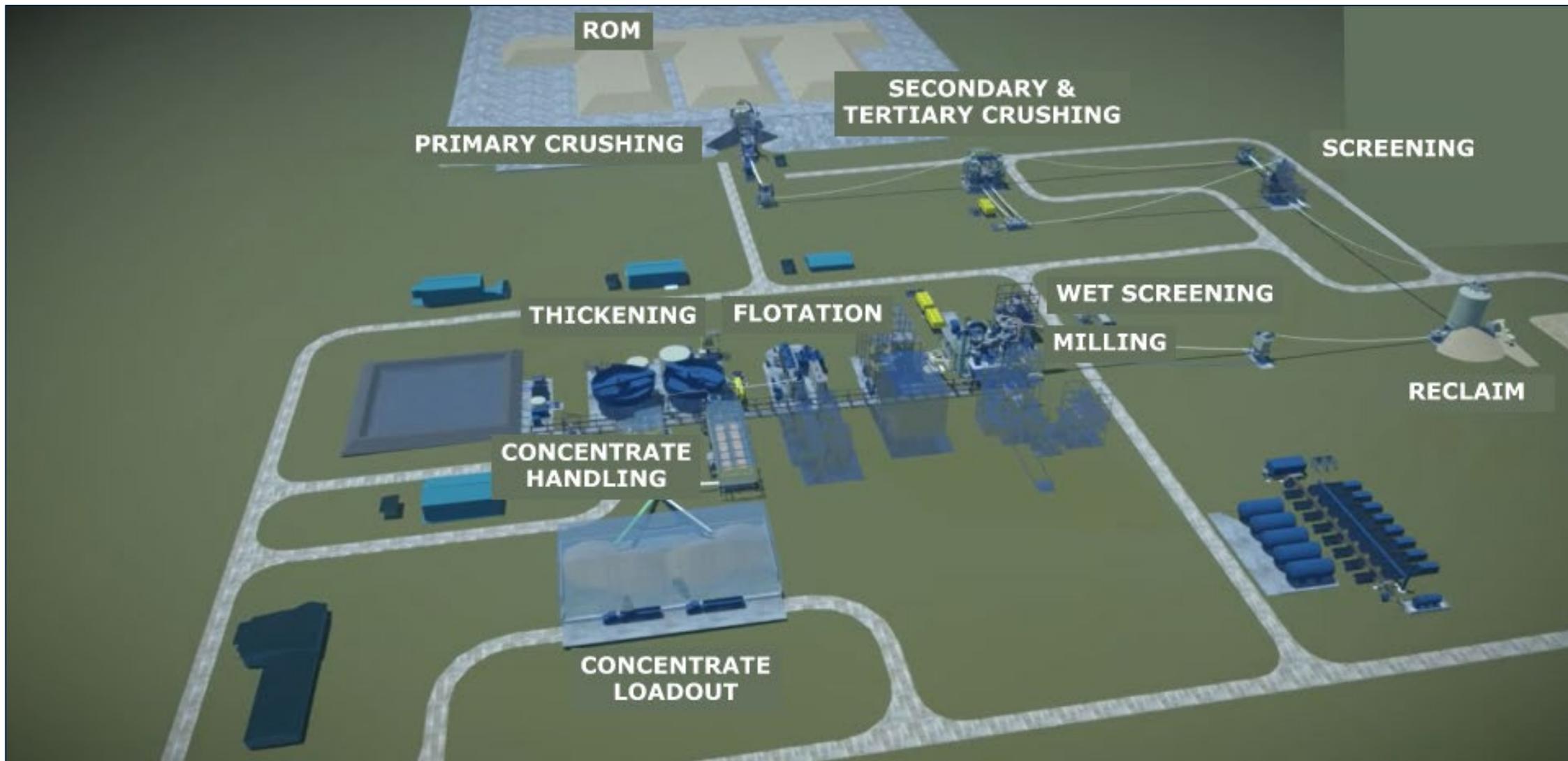


## Top 10 Investors<sup>6</sup>

1	Van Eck Associates Corporation	5.6%	52.6M
2	Michael Pacha	2.9%	26.9M
3	Kinetic Investment Partners Pty Ltd	2.9%	26.8M
4	Capital DI Ltd	2.1%	20.0M
5	Westoz Funds Management Pty Ltd	2.1%	20.0M
6	Mark Wesley Jones	1.9%	17.8M
7	Franklin Advisers, Inc.	1.9%	17.5M
8	UBS Switzerland AG	1.5%	13.8M
9	Brendan Borg	1.5%	13.7M
10	Phillip Perry	1.2%	11.3M

1. SOI and share price as at close 3 December 2021. Market cap is quoted on a fully diluted basis; 2. See ASX release 3 May 2021 and 8 July 2020; 3. As at 28 November 2021. 4. Overdraft facility of A\$5.91m as at 30 June 2021; 5. Intra-day high 3 December 2021. 6. As at 28 October 2021.

# GOULAMINA PROCESS PLANT LAYOUT



# B

APPENDIX

## Morila Overview



# MORILA OVERVIEW

Rapidly growing production to 150-200kozpa<sup>1</sup>

Will place Morila as a top 20 ASX gold project

Robust cashflows - US\$604m (A\$805m) to 2028<sup>1</sup>

## KEY LIFE OF MINE PLAN METRICS:

LoM Production	1.45Moz @ 1.5g/t
10 Years <sup>2</sup>	1 July 2021 – 31 December 2030
Average Production	160koz/yr
AISC	US\$1,124/oz
Global Mineral Resources <sup>1</sup>	2.43Moz
Global Mineral Reserves <sup>1</sup>	1.07Moz

1. Refer to ASX Announcement entitled, Life of Mine Plan released on 5 May 2021 for further information; 2. 10-year LOMP covers the period 2021-2030 (inclusive) with 2021-2028 based on the Ore Reserve for the Morila Project, along with Inferred Resources falling within the pit design. The balance of the plan covers Indicated and Inferred Resources from the Morila Stage 2 Pit, which is not currently classified as Ore Reserves.



First gold pour at Morila under Firefinch ownership

# FUTURE CATALYSTS

## 2021: Production from Satellite Pits

- Plus dewatering and pre-strip of Morila

## From H2 2022: Morila Super Pit Ramp Up

- 2022 production target of >100,000oz
- Ramping up to >150,000oz in 2023 and >200,000oz in 2024<sup>1</sup>

## Beyond: Blue sky

- Near mine & regional exploration
- Morila underground potential

# RESPONSIBLE MINERS

Significant expected contribution in taxes, royalties, wages and local procurement over next 10 years at Morila



Morila's agribusiness project includes five operations: poultry, fish, fruit, beekeeping and livestock feed production. In poultry farming, about 59,000 layers and broilers are being raised



The fish farm produces over 60,000 tilapia fry each quarter



Strong stakeholder relations; Minister for Environment (above)



Strict Covid protocols protect health & safety of our local workforce

# C

APPENDIX

## Reserves & Resources



# MINERAL RESOURCES AT MORILA

Deposit	Measured & Indicated			Inferred			Total		
	Tonnes (m)	Grade (g/t)	Ounces ('000)	Tonnes (m)	Grade (g/t)	Ounces ('000)	Tonnes (m)	Grade (g/t)	Ounces ('000)
Morila Pit <sup>1</sup>	21.2	1.60	1,090	17.5	1.37	770	38.6	1.50	1,860
Morila NE <sup>2</sup>				0.21	3.07	21	0.21	3.07	21
Samacline <sup>2</sup>				3.74	2.56	308	3.74	2.56	308
Morila Pit 5 <sup>3</sup>	0.72	1.04	24	0.12	1.38	6	0.84	1.09	30
Koting <sup>3</sup>	0.65	1.05	22	0.28	0.94	8	0.93	1.01	30
N'Tiola <sup>3</sup>	2.42	1.05	81	0.01	0.74	1	2.43	1.04	81
Viper <sup>3</sup>	1.52	1.04	51	0.03	1.41	1	1.55	1.05	52
Domba <sup>4</sup>	0.20	1.75	11	0.25	1.61	13	0.46	1.67	25
Tailings <sup>5</sup>	1.73	0.50	28				1.73	0.50	28
<b>Total</b>	<b>28.42</b>	<b>1.43</b>	<b>1,309</b>	<b>22.08</b>	<b>1.58</b>	<b>1,124</b>	<b>50.50</b>	<b>1.50</b>	<b>2,430</b>

1. The Morila Pit resource is quoted using a 0.4g/t gold cut-off grade; 2. The Samacline and Morila NE resources are quoted using a 1.8g/t gold cut-off grade; 3. The N'Tiola, Viper, Koting and Morila Pit 5 resources are quoted using cut-off grades ranging from 0.35 – 0.45g/t gold, further information in the ASX Announcement of 3<sup>rd</sup> May 2021; 4. The Domba resource is quoted using a 0.5g/t gold cut-off grade, further information in the ASX Announcement of 24<sup>th</sup> November 2020; 5. The Tailings resource is quoted using a 0.3g/t gold cut-off grade and is current as at 31 March 2021; 6. A detailed breakdown of Measured, Indicated and Inferred Mineral Resources is contained in the ASX Announcement of 3<sup>rd</sup> May 2021; 7. Numbers in the above table may not appear to sum correctly due to rounding.

# PROBABLE ORE RESERVES AT MORILA

Deposit	Total		
	Tonnes (m)	Grade (g/t)	Ounces (‘000)
Morila Pit <sup>1</sup>	19.8	1.47	932
N’Tiola <sup>1</sup>	2.13	1.08	74
Viper <sup>1</sup>	1.30	1.46	43
Koting <sup>1</sup>	0.63	0.98	20
<b>Total<sup>2</sup></b>	<b>23.8</b>	<b>1.40</b>	<b>1,070</b>



1. Details contained in the ASX Announcement of 5<sup>th</sup> May 2021; 2. Numbers in the above table may not appear to sum correctly due to rounding.

# GOULAMINA RESOURCE AND RESERVE

## Goulamina Mineral Resource Estimate - June 2020

Classification	Tonnes (m)	Grade Li <sub>2</sub> O (%)	Contained Tonnes Li <sub>2</sub> O
Measured	8.4	1.57	133,000
Indicated	56.2	1.48	832,000
Inferred	43.9	1.38	606,000
<b>Total</b>	<b>108.5</b>	<b>1.45</b>	<b>1,570,000</b>

## Goulamina Open Pit Ore Reserve Estimate – October 2020

Proven	8.1	1.55	125,000
Probable	44.0	1.50	660,000
<b>Total</b>	<b>52.0</b>	<b>1.51</b>	<b>785,000</b>



# D

APPENDIX

## Company References

# PRODUCTION – COMPANY REFERENCES

## SPODUMENE PRODUCTION CAPACITY (KTPA)<sup>1</sup>

Companyf	Company code	Project name	Announcement title	Announcement date	Production
AVZ / CATH	AVZ	Manono	Capital Raising Presentation	9-Aug-21	700
Core Lithium	CXO	Finniss	Equity Raising Investor Presentation	26-Jul-21	173
Critical Elements	CRE (TSX)	Rose	Investor Presentation	16-Apr-21	237 <sup>2</sup>
European Lithium	EUR	Wolfsberg	Corporate Presentation September 2020	14-Sep-20	67
<b>Firefinch / Ganfeng (Stage 1)</b>	<b>FFX</b>	<b>Goulamina</b>	<b>Goulamina Lithium Project Updated DFS</b>	<b>6-Dec-21</b>	<b>506</b>
<b>Firefinch / Ganfeng (Stage 2)</b>	<b>FFX</b>	<b>Goulamina</b>	<b>Goulamina Lithium Project Updated DFS</b>	<b>6-Dec-21</b>	<b>831</b>
Frontier Lithium	FL (TSX)	Pakeagama Lake	Pakeagama Lake Technical Report	19-May-21	180 <sup>3</sup>
IronRidge Resources / Piedmont	IRR (LON)	Ewoyaa	Ewoyaa Secures Full Funding to Production US\$102m	1-Jul-21	295
Keliber Oy / Sibanye	Private / SSW (JSE)	Keliber	Keliber Updated Definitive Feasibility Study	28-Feb-19	113
Kodal Minerals	KOD (LON)	Bougouni	Annual Report for year ended 31 March 2021	31-Mar-21	220
Liontown	LTR	Kathleen Valley	Kathleen Valley DFS confirms Tier 1 global lithium project	11-Nov-21	658
Mineral Resources / Albemarle	MIN	Wodgina	Bank of America – Metals, Mining and Steel Conference Presentation	18-May-21	750
Mineral Resources / Ganfeng	MIN	Mt Marion	Bank of America – Metals, Mining and Steel Conference Presentation	18-May-21	475
Orocobre	ORE	James Bay	FY21 Results Presentation	25-Aug-21	330
Orocobre	ORE	Mt Cattlin	FY21 Results Presentation	25-Aug-21	210
Piedmont Lithium	PLL	Carolina Lithium	Scoping Update Presentation	10-Jun-21	248
Pilbara Minerals	PLS	Pilgangoora	PLS Corporate Presentation Sep 2021	16-Sep-21	1,000
Premier African Minerals	PREM (LON)	Zulu	Corporate Presentation June 2021	6-Jul-21	84
Prospect Resources	PSC	Arcadia	Staged OFS Investor Presentation	11-Oct-21	133
Rock Tech Lithium	RCK (TSX)	Georgia Lake	Preliminary Economic Assessment for the Georgia Lake Lithium Project	21-Apr-21	93
Savannah Resources	SAV (LON)	Mina do Barroso	Savannah Corporate Presentation September 2021	21-Jul-21	175
Sayona / Piedmont	SYA-AU	North American Lithium	Presentation to Noosa Virtual Conference	17-Jul-20	180
Sayona Mining / Piedmont	PLL	Authier	Scoping Update Presentation	10-Jun-21	113
Sigma Lithium	SGMA (TSX)	Grota de Cirilo	Sigma Lithium PEA Results	2-Jun-21	440
SQM / Wesfarmers	WES	Mt Holland	KDR: Registration of Scheme Booklet	1-Aug-19	411
Tianqi / Albemarle / IGO	IGO	Greenbushes	IGO invests in Global Lithium JV with Tianqi	9-Dec-20	1,350 <sup>4</sup>

Source: Company filings at 6 December 2021. Includes global spodumene projects owned by listed companies that have completed at least a Scoping Study; 1. Excludes Kings Mountain (Albemarle) and San Jose (Infinity Lithium) due to lack of publicly available information; 2. Includes 50.2ktpa technical grade 6% spodumene and 186.3ktpa chemical grade 5% spodumene; 3. Concentrate transported to Thunder Bay annually; 4. Greenbushes production inclusive of CGP1/2 and TGP only.

# MINERAL RESOURCE – COMPANY REFERENCES

## MINERAL RESOURCE (MT) AND GRADE (% Li<sub>2</sub>O)

Company	Company code	Project name	Status	Announcement title	Announcement date	Resource (Mt)	Resource grade (% Li <sub>2</sub> O)
AVZ / CATH	AVZ	Manono	Developer	Annual Report to shareholders	29-Oct-21	401	1.65%
Core Lithium	CXO	Finniss	Developer	Mining the Territory Conference Presentation	26-Oct-21	15	1.32%
Critical Elements	CRE (TSX)	Rose	Developer	Investor Presentation - High Purity Lithium Spodumene Project	10-Nov-21	35	1.03%
European Lithium	EUR	Wolfsberg	Developer	EUR Increases Measured and Indicated Resource by 54%	9-Nov-21	14	0.95%
<b>Firefinch / Ganfeng</b>	<b>FFX</b>	<b>Goulamina</b>	<b>Developer</b>	<b>Goulamina Lithium Project confirmed as world class deposit</b>	<b>20-Oct-20</b>	<b>109</b>	<b>1.45%</b>
Frontier Lithium	FL (TSX)	Pakeagama Lake	Developer	PAK Lithium Project Technical Report	19-May-21	29	1.64%
Infinity Lithium	INF	San Jose	Developer	Integrated Underground Scoping Study San Jose Lithium Project	14-Oct-21	111	0.61%
IronRidge Resources / Piedmont	PLL	Ewoyaa	Developer	Company Presentation - November 2021	10-Nov-21	15	1.31%
Keliber Oy / Sibanye	Private	Keliber	Developer	M&I Mineral Resources Increased by more than 30%	26-May-21	16	1.05%
Kodal Minerals	KOD (LON)	Bougouni	Developer	Feasibility Study for the Bougouni Lithium Project	27-Jan-20	21	1.11%
Liontown	LTR	Kathleen Valley	Developer	Kathleen Valley DFS confirms Tier-1 global lithium project	11-Nov-21	156	1.35%
Mineral Resources / Albemarle	MIN	Wodgina	Producer	Wodgina Mineral Resource and Ore Reserve Update	23-Oct-18	259	1.17%
Mineral Resources / Ganfeng	MIN	Mt Marion	Producer	Mt Marion Mineral Resource Update	31-Oct-18	71	1.37%
Orocobre	ORE	James Bay	Developer	FY21 Results Presentation	25-Aug-21	40	1.40%
Orocobre	ORE	Mt Cattlin	Producer	FY21 Results Presentation	25-Aug-21	11	1.20%
Piedmont Lithium	PLL	Carolina Lithium	Developer	Company Presentation - November 2021	10-Nov-21	44	1.08%
Pilbara Minerals	PLS	Pilgangoora	Producer	Material increase in Ore Reserve	6-Oct-21	309	1.14%
Premier African Minerals	PREM (LON)	Zulu	Developer	Corporate Presentation - June 2021	6-Jul-21	20	1.06%
Prospect Resources	PSC	Arcadia	Developer	Arcadia Staged Optimised Feasibility Study	11-Oct-21	73	1.06%
Rock Tech Lithium	RCK (TSX)	Georgia Lake	Developer	Investor Presentation - October 2021	30-Oct-21	13	1.08%
Savannah Resources	SAV (LON)	Mina do Barroso	Developer	Europe's Leading Conventional Lithium Project	30-Sep-21	27	1.06%
Sayona / Piedmont	PLL	North American Lithium	Developer	Company Presentation - November 2021	10-Nov-21	58	1.05%
Sayona Mining / Piedmont	PLL	Authier	Developer	Company Presentation - November 2021	10-Nov-21	21	1.01%
Sigma Lithium	SGMA (TSX)	Grota do Cirilo	Developer	Corporate Presentation	1-Feb-21	52	1.43%
SQM / Wesfarmers	WES	Mt Holland	Developer	KDR: Registration of Scheme Booklet	1-Aug-19	189	1.50%
Tianqi / Albemarle / IGO	IGO	Greenbushes	Producer	IGO Invests in Global Lithium JV with Tianqi	9-Dec-20	197	1.93%

# CAPITAL COSTS– COMPANY REFERENCES

## INITIAL CAPITAL COST (US\$M)<sup>1</sup>

Company	Company code	Project name	Status	Announcement title	Announcement date	Initial Capex (US\$m)
AVZ / CATH	AVZ	Manono	Developer	Capital Raising Presentation	2-Jul-21	545
Core Lithium	CXO	Finniss	Developer	Definitive Feasibility Study Investor Presentation	6-Aug-21	62
Critical Elements	CRE (TSX)	Rose	Developer	Rose Lithium-Tantalum Project Feasibility Study	29-Nov-17	273
European Lithium	EUR	Wolfsberg	Developer	European Lithium Completes Positive PFS	5-Apr-18	389
<b>Firefinch / Ganfeng</b>	<b>FFX</b>	<b>Goulamina (Stage 1)</b>	<b>Developer</b>	<b>Goulamina Lithium Project Updated DFS</b>	<b>6-Dec-21</b>	<b>255</b>
<b>Firefinch / Ganfeng</b>	<b>FFX</b>	<b>Goulamina (Stage 2)</b>	<b>Developer</b>	<b>Goulamina Lithium Project Updated DFS</b>	<b>6-Dec-21</b>	<b>325</b>
Infinity Lithium	INF	San Jose	Developer	Integrated Underground Scoping Study San Jose Lithium Project	14-Oct-21	532
IronRidge Resources / Piedmont	IRR (LON)	Ewoyaa	Developer	Company Presentation - November 2021	10-Nov-21	68
Kodal Minerals	KOD (LON)	Bougouni	Developer	Feasibility Study for the Bougouni Lithium Project	27-Jan-20	129
Liontown	LTR	Kathleen Valley	Developer	Kathleen Valley DFS confirms Tier-1 global lithium project	11-Nov-21	393
Orocobre	ORE	James Bay	Developer	GXY: Scheme Booklet registered by ASIC	5-Jul-21	244
Piedmont Lithium	PLL	Carolina Lithium	Developer	Company Presentation - November 2021	10-Nov-21	839
Premier African Minerals	PREM (LON)	Zulu	Developer	Zulu Updated Scoping Study	16-Aug-21	69
Prospect Resources	PSC	Arcadia	Developer	Arcadia Staged Optimised Feasibility Study	11-Oct-21	212
Rock Tech Lithium	RCK (TSX)	Georgia Lake	Developer	PEA for an Integrated Lithium Hydroxide Operation from Georgia Lake	21-Apr-21	55
Savannah Resources	SAV (LON)	Mina do Barroso	Developer	Company Presentation - November 2021	10-Nov-21	109
Sayona Mining / Piedmont	SYA	Authier	Developer	Revised Authier DFS Shows Boost to Profitability	11-Nov-19	91
Sigma Lithium	SGMA (TSX)	Grota de Cirilo	Developer	Grota do Cirilo Lithium Project Feasibility Study	16-Sep-19	136
SQM / Wesfarmers	WES	Mt Holland	Developer	Mt Holland Lithium Project - Final Investment Decision; Kidman Resources announces completion of Kwinana Lithium Refinery PFS and updated Mine & Concentrator Scoping Study	17-Feb-21; 22-Oct-18	964 <sup>2</sup>

Source: Company filings at 6 December 2021; 1. All capital cost figures are converted to USD at the exchange rate in the relevant feasibility study. Goulamina Stage 1 capital intensity calculated as Stage 1 capex of US\$255m divided by Stage 1 production capacity of 506ktpa. Stage 2 capital intensity calculated as Stage 1+2 capex of US\$325m divided by Stage 2 production of 831ktpa; 2. Excludes US\$436m in refinery costs.

# RECOVERY – COMPANY REFERENCES

## RECOVERY (%)

Company	Company code	Project name	Status	Announcement title	Announcement date	Recovery (%)
AVZ / CATH	AVZ	Manono	Developer	AVZ Delivers Highly Positive DFS for Manono Project	21-Apr-20	60.0%
Core Lithium	CXO	Finniss	Developer	Definitive Feasibility Study Investor Presentation	6-Aug-21	71.7%
Critical Elements	CRE (TSX)	Rose	Developer	Investor Presentation - High Purity Lithium Spodumene Project	10-Nov-21	87.0%
European Lithium	EUR	Wolfsberg	Developer	European Lithium Completes Positive PFS	5-Apr-18	75.4%
<b>Firefinch / Ganfeng (DFS Update)</b>	<b>FFX</b>	<b>Goulamina</b>	<b>Developer</b>	<b>Goulamina Lithium Project Updated DFS</b>	<b>[x]-Dec-21</b>	<b>80.0%</b>
<b>Firefinch / Ganfeng (October 2020 DFS)</b>	<b>FFX</b>	<b>Goulamina</b>	<b>Developer</b>	<b>Goulamina Lithium Project confirmed as world class deposit</b>	<b>20-Oct-20</b>	<b>77.0%</b>
Frontier Lithium	FL (TSX)	Pakeagama Lake	Developer	PAK Lithium Project Technical Report	19-May-21	73.0%
Infinity Lithium	INF	San Jose	Developer	Integrated Underground Scoping Study San Jose Lithium Project	14-Oct-21	79.6%
IronRidge Resources / Piedmont	IRR (LON)	Ewoyaa	Developer	Ewoyaa Lithium Project Scoping Study	19-Jan-21	65.6%
Kodal Minerals	KOD (LON)	Bougouni	Developer	Feasibility Study for the Bougouni Lithium Project	27-Jan-20	71.0%
Liontown	LTR	Kathleen Valley	Developer	Kathleen Valley DFS confirms Tier-1 global lithium project	11-Nov-21	78.0%
Mineral Resources / Albemarle	MIN	Wodgina	Producer	Wodgina Site Tour Presentation	25-Oct-18	65.0%
Orocobre	ORE	James Bay	Developer	GXY: Scheme Booklet registered by ASIC	5-Jul-21	71.0%
Orocobre	ORE	Mt Cattlin	Producer	GXY: Scheme Booklet registered by ASIC	5-Jul-21	60.0% <sup>1</sup>
Piedmont Lithium	PLL	Carolina Lithium	Developer	Scoping Update Highlights Exceptional Economics of Project	10-Jun-21	80.0%
Pilbara Minerals	PLS	Pilgangoora	Producer	Material increase in Ore Reserve	6-Oct-21	72.1% <sup>2</sup>
Premier African Minerals	PREM (LON)	Zulu	Developer	Zulu Scoping Study	13-Nov-17	72.1%
Prospect Resources	PSC	Arcadia	Developer	Arcadia Staged Optimised Feasibility Study	11-Oct-21	78.2%
Rock Tech Lithium	RCK (TSX)	Georgia Lake	Developer	PEA for an Integrated Lithium Hydroxide Operation from Georgia Lake	21-Apr-21	80.0%
Savannah Resources	SAV (LON)	Mina do Barroso	Developer	Scoping Study for the Mina do Barroso Lithium Project	14-Jun-18	80.0%
Sayona Mining / Piedmont	PLL	Authier	Developer	Revised Authier DFS Shows Boost to Profitability	11-Nov-19	78.0%
Sigma Lithium	SGMA (TSX)	Grota de Cirilo	Developer	Grota do Cirilo Lithium Project Feasibility Study	16-Sep-19	60.4%
SQM / Wesfarmers	WES	Mt Holland	Developer	Kidman Resources announces completion of Kwinana Lithium Refinery PFS and updated Mine & Concentrator Scoping Study	22-Oct-18	75.0%
Tianqi / Albemarle / IGO	IGO	Greenbushes	Producer	IGO Invests in Global Lithium JV with Tianqi	9-Dec-20	70.0%

Source: Company filings at 6 December 2021; 1. CY21 guidance; 2. Weighted average of Pilgan Plant (75%) and Ngungaju Pant (68%).