

# **Due Diligence and Valuation Report**

Arrowhead code: 27-03-04

Coverage initiated: June 3, 2021

This document: October 4, 2022

Fair Value Bracket (per share): AUD 0.79 to AUD 0.97

Share Price (October 4, 2022): AUD 0.56

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**Market Data** 

52-Week Range:	AUD 0.28-1.04
Average Daily Volume:	1,540,816
Market Cap as on date:	AUD 221.0 million

### Financial Forecast (in AUD) (FY Ending - June)

AUD	`23P	`24P	`25P	`26P	`27P
NI (mn)	(3.4)	(3.6)	(3.6)	71.3	159.8
EPS (cents)	(0.01)	(0.01)	(0.01)	0.18	0.41

### **Company Overview**

Lithium Power International Limited ("LPI" or "the Company") is a pre-revenue pure play, diversified lithium exploration, and development company involved in the acquisition and advancement of promising lithium projects. The Company has a geologically and geographically diversified asset base, with projects in Chile and Australia. All of the Company's projects with the exception of the Minera Salar Blanco S.A. ("MSB") joint venture ("JV") in Chile are currently in exploration stage. The MSB JV is about to enter the construction stage with production likely to begin in 2025.

MSB is the Company's flagship project, with an updated Definitive Feasibility Study ("DFS") on Stage One of MSB completed in January 2022. Currently, LPI has a 51.6% interest in MSB JV. However, on June 22, 2022, the Company announced that it will consolidate 100% interest in the project through two all-scrip mergers with its JV partners. If approved, the transaction will enable LPI to rapidly develop the project by giving it complete autonomy over decision-making.

### **Key Highlights**

 LPI currently has one brine asset in Chile (MSB JV) and three hard rock assets in Australia. LPI's flagship MSB JV is among the most advanced development-stage projects in the market. It is about to enter the construction phase with production likely to begin in 2025. The Company's other three assets are currently in exploration stage.





Company: Lithium Power International Ltd

Ticker: ASX: LPI

Headquarters: Sydney, Australia CEO & MD: Cristobal Garcia-Huidobro

CFO: Andrew Phillips

Website: www.lithiumpowerinternational.com

- 2. Currently, LPI owns 51.6% of the MSB JV while Borda Group owns 31.3%, and Bearing Lithium owns 17.1%.
- According to the latest DFS released in 2022 only for Stage One of MSB, the annual production of Lithium Carbonate Equivalent ("LCE") is estimated to be 15,200 tonnes per annum, with an expected mine life of 20 years.
- 4. MSB has obtained environmental approval as well as basic infrastructure permissions and approvals for water, roads, electricity, port, logistics, etc. It has also signed a non-binding Memorandum of Understanding ("MoU") with Japan's Mitsui & Co., Ltd. ("Mitsui") for the project's further development.
- 5. LPI's other projects in Western Australia are Tabba Tabba (WA), Pilgangoora (WA), Greenbushes (WA), and Nannup and Wilga Project. The Company is planning to spin out its Pilgangoora and Greenbushes assets within the next few months and create a new WA-focused lithium exploration company for these assets.

### **Key Risks**

We believe that LPI has a mid-high risk profile because all of its assets are currently in the pre-production stage and none of them is expected to generate revenue until early 2026. The Company requires significant capex to bring all of its projects online and to support its aggressive future acquisition plans.

### **Valuation and Assumptions**

Based on its due diligence and valuation estimates, Arrowhead believes that LPI's fair share value lies in the AUD 0.79 to AUD 0.97 bracket, which has been calculated using a blended valuation method for the MSB project; with 50% weighting to the DCF method and 50% weighting to Comparable Companies Valuation method and then adding the book value of other exploration & evaluation assets to the weighted average equity value of MSB project. Our model suggests a fair value of AUD 0.88. Our DCF model suggests a fair value of AUD 0.89 per share, while a relative valuation provides a fair value of AUD 0.86.



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### **Investment Thesis**

Arrowhead is updating equity research coverage of Lithium Power International Ltd. ("LPI") with the following investment highlights:

### Strong demand for lithium-ion batteries to benefit early movers like LPI the most

Lithium is primarily used for manufacturing lithium-ion batteries used in Electric Vehicles ("EVs"), mobile phones, tablets, grid-level mass storage systems etc. The demand for these batteries has grown significantly in recent years due to the growing demand for these products and is likely to continue growing sharply. The demand growth for battery-grade lithium is expected to exceed its supply growth in the coming years, resulting in a significant lithium shortage by 2025 and could potentially skyrocket lithium prices. Many new players are entering the lithium mining space to benefit from these rising prices. Existing players are also trying to aggressively expand by accelerating the development of existing assets, acquiring new assets, and merging or entering JVs with competitors. Companies like LPI that were early to identify the strong growth potential of the lithium market and acquire promising lithium assets are likely to benefit the most from the upcoming lithium boom.

### Smooth progress of the high-potential MSB asset a major positive

LPI's MSB asset is among the most advanced development-stage lithium assets in the market. The development of this asset has been managed commendably, making it among very few assets whose Definitive Feasibility Study ("DFS") has been concluded and all the important approvals and permits, (including EIA and water) have been secured. A DFS released on the project in 2019 supported LCE production potential of 20,000 tonnes per annum over a 20-year period. This DFS was conducted on the complete project including both the Old Code Mining Concessions ("OCC"), known as Stage One and the New Code Concessions, also referred to as Stage Two by the Company.

An updated Resource Report was released by the Company in September 2021, showing a 91% increase in the Measured and Indicated Resources. In January 2022, the Company released the results of an updated DFS, which was conducted only on OCC (Stage One concessions) by engineering consultancy, Worley. As per the latest DFS, the production from OCC is estimated at an average of 15,200 tonnes per annum of battery-grade lithium carbonate for 20 years. This result is based on exploration work carried out to a depth of 400-meters only on Stage One concessions as compared to the previous DFS released in 2019, which was done on the complete asset and was only up to 200-meters. The latest DFS on OCC also provides an estimate of USD 626 million for the CAPEX, which includes project development costs, indirect costs, and contingency costs. The estimate includes all the information contained on the proposals received as part of the international EPC bidding process carried out by the company in 2020, after accounting for the expected inflation on different materials and supplies.

The Company's current goal is to finalize the financing for the project by the end of 2022. LPI is working with both international and Chilean financial institutions to raise capital for the development of the mine. Given the positive results from the latest DFS of Stage One project, the Company is continuing to work on the development of subsequent stages at Maricunga. LPI has entered a non-binding MoU with Mitsui for the Stage One development of MSB, among many other things. This would go a long way in maintaining the smooth progress of MSB as it enters its critical construction stage, as LPI is counting on the partnership to bring the capital and technical knowhow that are crucial for the project's success.



### Focus on high-grade lithium properties

LPI specifically focusses on identifying, exploring, and developing high-grade lithium properties. The Company currently has assets in Chile and Australia, which have the world's largest and highest-grade lithium reserves. It is also exploring tenements in these countries both independently and through strategic partnerships. The Company's flagship MSB JV in Chile has among the world's highest-grade lithium resources at 957 mg/l lithium and 8,500 mg/l potassium concentration. The updated DFS on Stage One of MSB released in January 2022, shows approximately 2x increase in the Measured and Indicated resource of LCE as compared to the resource estimated in DFS released in 2019.

MSB produced its first battery-grade lithium carbonate sample in 2018 with GEA Messo. LPI expects to produce a high purity and a high-quality battery grade lithium carbonate. This will allow the Company to make the most of the expected growth in demand for lithium-ion batteries used in EVs, as well as tablets, mobile phones, and other consumer electronics.

### Partnerships with established miners to offset lack of operating experience

LPI does not have any experience of operating and managing in-production assets since none of its assets have entered production yet. The Company's leadership team have extensive experience of managing in-production assets at other organizations but have not worked with such assets together, as one team. The Company also has an MoU with Japanese major Mitsui, which could soon culminate into a JV with MSB. This partnership is likely to go a long way in offsetting LPI's lack of operating experience, at least for MSB.

# Converting Mitsui MoU into a binding agreement and the ability to finance other ambitious growth plans will be critical going forward

LPI has periodically tapped capital markets to fund its growth plans. After its AUD 8.9 million IPO in 2016, the Company raised an additional AUD 28.3 million and AUD 8.0 million through private placements in 2017 and 2020, respectively. LPI's most recently raised capital in September 2022, bringing in AUD 25 million through a placement of its shares to sophisticated and institutional investors. The Company is currently in discussions with investors for raising capital required for the next stage of MSB's development. MSB has entered into a non-binding MoU with a Japanese company Mitsui for the further development of the MSB project, including potential off-take agreements and funding rights for the Stage One of the project. Although this is an encouraging first step and the Company expects to convert the MoU into a binding agreement in due course, its financial uncertainty cannot be completely ruled out in the absence of a firm commitment from Mitsui. LPI will also need to raise additional debt and equity capital to finance MSB's further development and the Company's other growth plans that include acquiring new assets and vigorously resuming exploration and drilling work at some of its properties after a Covid-related pause. The ability to convince investors about the viability of the Company's future plans and the management's ability to execute these plans successfully would be critical to raise these funds.

### Increasing prices of Potassium Chloride ("KCI") could further lower operating costs

Along with the production of Lithium on Stage One, LPI also has permits to produce KCl, which is a by-product during the production of Lithium. Until now, the Company did not plan to process and sell potash due to its depressed prices. The recent recovery of the prices will allow the Company to consider the production and sale of KCl at no additional costs, thus effectively reducing its lithium cash operating costs.

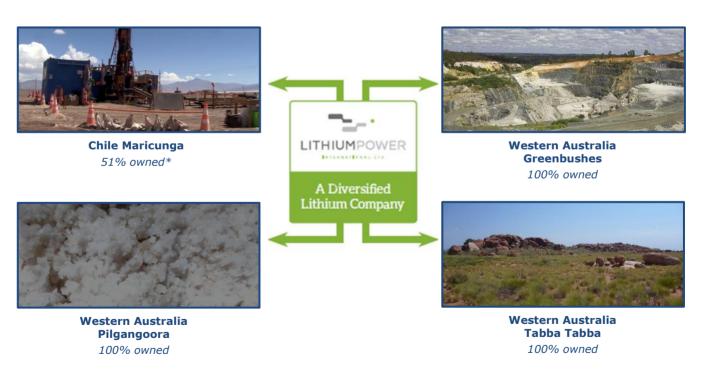


# **Company Presentation**

Lithium Power International Limited (ASX: LPI) ("LPI" or "the Company") was incorporated in 2015 and listed on the Australian Securities Exchange in 2016. LPI is as a pure-play, diversified lithium company that acquires, explores, and develops promising lithium projects.

LPI is currently working in four distinct project regions, consistent with its objective of maintaining a geographically and geologically diverse asset base. The Company has one project in South America's lithium brine region in Chile and four projects and two tenements in Western Australia's spodumene hard rock areas. The Company is planning to spin out its Pilgangoora and Greenbushes assets within the next few months and create a new WA-focused lithium exploration company. The Company is targeting to complete the demerger process by Q3'22. The demerger will allow the company to effectively allocate its resources on MSB and maximize the value of its WA assets. The Company further announced that the new demerged entity will be named Western Lithium Ltd ("WLI"). and it has applied to the Australian Securities and Investment Commission to get listed as a public company.

Currently, LPI is primarily focusing on developing its flagship MSB project in Chile, with an objective of becoming one of Chile's lowest-cost high-grade lithium producers. MSB's Stage One project is among the most advanced development-stage asset in the market with all key approvals and licenses in place. It is the only new mining asset to be granted Chile's prized environmental approval in the last five years. LPI is also continuing its exploration work in Western Australia. The Maricunga Salar, the location of the MSB properties, is within South America's "Lithium Triangle" that comprises Chile, Argentina and Bolivia, and hosts approximately half of the world's lithium reserves.



\*If the scrip mergers announced on June 22 are approved by the shareholders, LPI will have a 100% ownership of the MSB project in Maricunga



## **Company Milestones**

Year	Event
2015	Incorporated in Sydney, Australia, as Lithium Power International
2016	Raised AUD 8.9 million through an IPO and listed on the Australian Stock Exchange
2010	Acquired several properties in Western Australia's Centenario Salar region
	Formed a JV by acquiring 50% stake in MSB in Chile
	Raised AUD 28.3 million equity capital
2017	Acquired assets in Western Australia's Tabba Tabba and Strelley regions.
	• Identified Greenbushes region for exploration through targeted rock and soil sampling programs
2018	Acquired another 1% stake in the MSB JV
2010	Sold 30% stake in the properties acquired in Centenario
2019	Released its first Definitive Feasibility Study for MSB
	Received environmental permit for MSB
	Received approval for Program of Works (POW) for the Greenbushes project
	Sold Strelley tenements to Carnaby Resources Ltd.
2020	<ul> <li>Raised AUD 8 million from sophisticated and institutional investors for developing the MSB project and conducting exploration activities at Greenbushes project</li> </ul>
	<ul> <li>Adopted a staged strategy to continue the development at Maricunga, accelerating the Stage One, based on part of its mining concessions.</li> </ul>
	Commenced exploration program adjacent to Greenbushes lithium mine owned and operated by Albemarle and Tianqi
	<ul> <li>Completed further resource drilling to the target depth of 400-meters at MSB and confirmed favorable specific yield and permeability characteristics</li> </ul>
2021	• Signed a non-binding MoU with Mitsui & Co., Ltd. For the development of the MSB project and future developments in Chile
	Sold remaining 70% interest in Centenario asset to Vertex Lithium Corporation
	Raised AUD 12.4 million from institutional investors
	<ul> <li>Measured and Indicated resource from 200-meters to 400-meters depth at Maricunga Stage One Lithium project is estimated to be 1,905,000 tonnes of LCE</li> </ul>



- Released an updated DFS for the Stage One Maricunga Lithium Brine Project
- Planned to spin out its Western Australian Greenbushes and Pilgangoora lithium assets

2022

- Announced its plan to consolidate 100% interests in the MSB project
- Purchased CMC Lithium for AUD 240,000
- Agreed to purchase two tenements in Eastern Goldfields of WA
- Raised AUD 25 million from institutional investors

### **Lithium Properties**

Asset / Project	Project Overview	Working Interest	Stage / Status
Maricunga Lithium Brine, Chile	Minera Salar Blanco S.A. is a joint venture that owns the MSB project. LPI has a 51.6% stake in the JV along with Borda Group (31.3%) and Bearing Lithium (17.1%).	51%	Advanced Exploration
Tabba Tabba, Western Australia	The project covers a 20 km strike of highly prospective greenstone units identified through mapping and regional magnetic surveys. A 31-hole drilling program was carried out in 2019. Additionally, a broad-spaced (300 x 30 m) regional soil sampling program was conducted in 2022 to create a geochemical dataset of the Taba Taba tenement.	100%	Early-Stage Exploration
Greenbushes, Western Australia	Tenements include the Balingup project, the Brockman Highway project, the Blackwood prospect, and the East Kirup Prospect. An UltraGPR survey was conducted across parts of the Blackwood Prospect which led to the identification of potential pegmatites that were previously unmapped. Additionally, the Company completed a 300 x 300 m soil sampling program along with two flora and fauna surveys. However, the Company is planning to spin out the asset in FY 2023 and operate it through a new WA-focused company that has the technical, human, and financial resources to manage it.	100%	Early-Stage Exploration
Pilgangoora, Western Australia	The tenement is situated adjacent to Pilbara Minerals' and Altura Mining's lithium pegmatite deposits. A soil sampling program was conducted on the tenement to better understand the previously defined lithium anomalies associated with the greenstone belts and to investigate the potential of gold within a younger granite and its contact aureole. The Company is planning to spin out the asset in FY 2023 and operate it through a new WA-focused company that has the technical, human, and financial resources to manage it.	100%	Early-Stage Exploration



Nannup Project and Wilga Project, Western Australia	On July 5, 2022, LPI announced the acquisition of CMC Lithium which held Nannup project and Wilga project. Both of these projects consist of two tenements, one granted and one under application. These tenements are of strategic importance to the Company for the exploration in WA. The Company is now the largest holder of ground along the Donnybrook-Bridgetown Shear Zone.	100%	Early-Stage Exploration
E15/1772 and E31/1250 Tenements	These tenements are spread across 115 km² and have native title agreements, providing the Company immediate access to exploration. Mineralization at these tenements is up to 10 km from the source granite, hosting mafic or ultramafic rocks from greenschist to amphibolite grade along major faults or lineaments.	100%	Early-Stage Exploration



### **Corporate Strategy & Future Outlook**

LPI's core strategic focus over the next few years will be completing the construction on Stage One of MSB and bringing it into production by 2025. LPI aims to become one of Chile's lowest-cost high-grade lithium producers and an eminent global producer of battery-grade lithium. Signing a non-binding MoU with Japan's Mitsui & Co., Ltd. in May 2021 was a landmark accomplishment towards operationalizing MSB soon and tapping the vast potential of Chile's Lithium industry. LPI and Mitsui have been in partnership discussions for over two years now and are in the process of finalizing the structure of this partnership in the hope of signing a definitive agreement in the coming months.

According to the MoU, Mitsui will have offtake and financing rights for MSB's Stage One development as well as future development. The MoU also lays out a broad framework for collaboration between LPI and Mitsui for future lithium mining projects in Chile as well as for related businesses, such as manufacturing lithium-based products. The MoU also discusses a collaboration for facilitating the development and testing of the Direct Lithium Extraction ("DLE") technology at MSB for the production of lithium hydroxide.

LPI's aims to leverage Mitsui's financial strength to build significant financial capacity for the future development of MSB as well as investments in other lithium assets in Chile. Mitsui will contribute equity capital as well as bring Japan Bank of International Cooperation ("JBIC") and Japan Oil, Gas and Metals Corporation ("JOGMEC") as a senior participant for debt capital. In parallel with finalizing the development of the Stage One, LPI will continue working on the future expansion and growth of Maricunga, with the development of the rest of its mining concessions at the project.

In addition to operationalizing MSB, LPI is likely to continue acquiring more high-grade lithium tenements in the coming years as its Mitsui partnership approaches finalization. However, exploration and development work on these assets is likely to remain slow until MSB's Stage One construction is underway. These new acquisitions are likely to be consistent with the Company's philosophy of acquiring assets that are geographically and geologically diverse so that it can maintain a low risk profile. Pursuant to this strategy, the Company has until now acquired assets in lithium-rich areas of Chile, Australia, and Argentina (LPI recently sold its only asset in Argentina) and is likely to continue focusing mainly on assets in Chile, followed by Australia and other geographies.



### News

### LPI raises AUD 25 million through share placement

September 9, 2022

LPI has received binding commitments from institutional, sophisticated, and professional investors to raise AUD 25 million through a single tranche share placement by issuing 41,666,667 new fully paid ordinary shares at an issue price of AUD 0.60 per share. Funds raised through the placement will primarily be used to develop, expand, and accelerate the Maricunga project.

### LPI buys CMC Lithium and two tenements in the Eastern Goldfields of WA

July 5, 2022

LPI has bought CMC Lithium and its Greenbushes Projects in Western Australia, adding an extra 365 km² of prospective ground around Talison Lithium's Greenbushes mine. The Company has also acquired two tenements in the mineral rich Eastern Goldfields of WA, from Lysander Lithium. These tenements were acquired for a combination of cash and LPI stock.

### LPI plans to consolidate 100% ownership of Maricunga Lithium Brine Project

June 22, 2022

LPI has planned to consolidate 100% ownership of the MSB project through a three-party all-scrip merger with its JV partners MSB SpA and Bearing Lithium who currently own 31.31% and 17.14% of the project. According to the Company, the transaction will result in an increase of 12% in proportionate interest from the current 51.55% to 57.9% for the LPI shareholders.

### LPI releases the updated DFS for the Stage One Maricunga project

January 20, 2022

The updated DFS results for the State One Maricunga Lithium Brine project shows production of 15,200 tonnes of LCE per annum for 20 years, with a CAPEX of USD 626 million. The project is expected to deliver an after tax NPV of USD 1.4 billion at an 8% discount rate, an IRR of 39.6%, and a 2-year payback period.

### LPI to spin out its Western Australian assets

January 12, 2022

LPI announced that it will spin out Western Australian Greenbushes and Pilgangoora lithium assets in the next six months. The demerger will result in the creation of a dedicated, WA-focused lithium exploration company with the management team and resources to realize the value of the WA assets. The Demerger will enable LPI to focus its resources exclusively on developing its Maricunga Lithium Brine Project in Chile.



### LPI receives payment for sales of the Centenario asset

### November 24, 2021

LPI announced the completion of a share purchase agreement with Vertex Lithium Corporation ("Vertex"), to acquire LPI's 70% of lithium exploration properties on the Centenario Salar (Centenario) in Argentina. The transaction involved a cash payment of USD 700,000 in exchange for 70% shareholding in the asset and USD 40,000 to cover the costs to execute the transaction. LPI has opted for the CAD 250,000 worth of fully paid ordinary shares in Vertex to be paid in cash, due to the delay in the IPO of Vertex on the TXS. Therefore, USD\$200,000 has been received in lieu of shares

### LPI's Maricunga Project sees a 90 percent in Measured & Indicated Resources

### September 29, 2021

A new updated report stated a 90 percent increase in Measured and Indicated Resource of Lithium in Maricunga. The new estimate of 1,905,000 tonnes is almost double in number when compared with the "Definitive Feasibility Study" conducted in 2019. The latest drilling for Stage One mining concessions at Maricunga has also been completed, with the five exploration core holes each reaching target depth of 400-meters.

### LPI Completes AUD 12.4 million Private Placement

### August 23, 2021

LPI has raised AUD 12.4 million through placement of new and fully paid ordinary shares to new and existing institutional investors. The issue was undertaken at a price of AUD 0.26 per share. The placement resulted in an increase of 47.69 million shares. These funds will be used for the in-progress Maricunga Lithium Brine project, and also for Greenbushes project and other possible targets in Western Australia.

### MSB Completed Drilling Program with 5 Core Holes

### July 8, 2021

An additional drilling program was initiated on MSB and was completed in July 2021. The drilling program on the Stage One mining concessions involved drilling of five exploration core holes (S-25, S-26, S-27, S-28 and S-29) each reaching target depth of 400-meters. There is a significant resource expansion expected for Stage One from this drilling program that tested the 200-meters to 400-meters mineralized zone. Worley, GEA Messo, and Atacama Waters are working on updating the DFS. Review and certification processes have been initiated for ESG protocols. Proposals from specialized advisors are expected during Q3 2021 to review all project information along with carbon footprint metrics.

### MSB Completes Sale of Remaining Stake in Centenario Salar Properties

### May 19, 2021

LPI announced the execution of a share purchase agreement with Canada-based Vertex Lithium Corporation to acquire 70% of lithium exploration properties on the Centenario Salar in Argentina. The Company sold 30% of its interest in the Centenario properties to ASX-listed Marquee Resources Ltd in 2019.



### MSB agrees on a Strategic Alliance with Mitsui for the Development of MSB Project

May 11, 2021

MSB has signed a non-binding MoU with the Japanese conglomerate Mitsui & Co., Ltd. to advance the development of the MSB project and future developments in the Chilean lithium industry. The alliance will include potential off-take and funding rights for the Stage One of the MSB project.

### MSB Completed Drilling for the Third Hole and Started Drilling in the Fourth Hole in the MSB Project

April 21, 2021

MSB has completed resource drilling in three out of five diamond core holes (S-25, S-26, and S-27) to the target depth of 400-meters. The fourth core hole is currently under drilling and all five holes are expected to be completed by early May, which is two weeks ahead of schedule. The first set of 31 undisturbed core samples collected from holes S-25 and S-26 have been sent to Geosystems Analysis laboratories in Tucson, Arizona and the results of drainable porosity and other hydraulic parameters are expected by the middle of May. Of a total of 56 brine samples collected at 12-meter intervals during the drilling, 20 samples have been sent to Andes Analytical Assay for analysis. Preliminary analysis shows average lithium concentrations above 1,000 ppm and positive lithium / calcium / magnesium ratios.

### Resource Drilling at MSB's Maricunga Project Expected to Expand Current Resource

March 11, 2021

MSB completed resource drilling in two of the five diamond core holes (S-25 and S-26) to the target depth of 400-meters ahead of schedule. Undisturbed core samples were collected between 200-meters and 400-meters depth and sent for analysis for laboratory measurement of drainable porosity and other hydraulic parameters. Positive brine density from the samples collected at 12m intervals during the drilling and preliminary measurements at the wellhead indicate high lithium concentrations, similar to the ones found on the 0-meters to 200-meters interval. Significant resource expansion is expected.

### LPI Commences Lithium Exploration Program Adjacent to Greenbushes Lithium Mine

February 11, 2021

LPI commenced exploration to define drill targets within the previously identified arsenic lithium anomalies. Regional laterite and rock chip sampling is also commencing in areas that previously were not tested by LPI. The Company's Greenbushes tenements cover approximately 40,000 ha north and south of the Greenbushes mine.

### LPI to Undertake New Field Program for Maricunga Lithium Brine Project

January 27, 2021

A new field program will be undertaken from February 2021 to update derailed engineering work to resize and optimize the revised Maricunga Stage One development. The target is to expand the current resource, which is from near surface to 200-meters depth, to include the interval between 200-meters and 400-meters. Drilling contracts have been awarded to international companies Major Drilling and Andinor, and all drilling equipment has been mobilized to the site.



# **Listing Information**

Lithium Power International, headquartered in Sydney, Australia is listed on the Australian Securities Exchange – (ASX: LPI).

### **Contacts**

Head office	Level 7, 151 Macquarie Street, Sydney NSW 2000
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# Top Shareholders as on September 13, 2022

Equity Holder	No. of ordinary shares held	% Shareholding
BNP Paribas Noms Pty Ltd	26,227,732	7.51%
Chifley Portfolios Pty Limited	21,485,888	6.15%
Citicorp Nominees Pty Limited	19,038,385	5.45%
Treasury Services Group Pty Ltd	16,469,314	4.72%
Minera Salar Blanco SPA	16,227,273	4.65%
Nabide Pty Limited	11,833,132	3.39%
BNP Paribas Nominees Pty Ltd ACF Clearstream	7,744,185	2.22%
G Harvey Nominees Pty Ltd	6,498,576	1.86%
HSBC Custody Nominees (Australia) Limited	6,006,610	1.72%
Merrill Lynch (Australia) Nominees Pty Limited	5,458,610	1.56%
BNP Paribas Nominees Pty Ltd (IB AU Noms Retail client DRP)	5,008,727	1.43%
J P Morgan Nominees Australia Pty Limited	4,748,765	1.36%
Others	202,397,651	57.98%
Total	349,144,848	100%

Source - LPI's Annual Report 2022



# **Management and Governance**

### **David R Hannon**

Chairman

- Over 30 years of experience in finance industry with a focus on property, mining, and international investing
- Founding Director and former Chairman of Atlas Iron Limited
- Led Chifley Investor Group Pty Limited for over 15 years

### Cristobal Garcia-Huidobro R

CEO and Managing Director

- Civil Engineer with over 21 years of experience developing and financing of mining, energy, infrastructure, and property projects
- · Led MSB's exploration and development program at Maricunga Salar
- Previously a director and committee member of various mining, property, and agricultural funds in North and South America

### **Richard A Crookes**

Executive Director - Corporate Finance

- Geologist with more than 30 years of experience in mining and finance sectors
- Highly regarded mining and investment professional with deep involvement in all aspects of mining projects including exploration, mineral resource development, operations, project finance, and project management

### **Andrew G Philips**

CFO, Company Secretary and Executive Director

- Over 25 years of international experience in commercial, finance and corporate governance
- Held senior management and board positions at several public and private companies, including multinationals, such as Aristocrat, Allianz, Hoya Lens, and Sequoia Financial Group
- On the board of small cap companies in the Mineral and Resources sector

### **Russell C Barwick**

Non-Executive Director

- Mining Engineer with over 43 years of experience globally and specially in Latin America
- Previously COO of Wheaton River Goldcorp, one of the largest gold company in the world by market capitalization
- Also served as CEO of Newcrest Mining and was with Placer Dome Inc. for 16 years



### **Martin Borda**

Non-Executive Director

- An economist with over 40 years of experience in a range of industries in Chile and internationally
- A major stakeholder in the early development stages of the Maricunga Lithium Brine Project which
  included the establishment of the joint venture company, Minera Salar Blanco S.A., of which he owns
  30.98% through a private investment entity. Mr Borda has served on many boards in Chile, including
  as a Non-Executive of Banco Scotiabank and Compania Molinera San Cristobal.
- Held board positions at many companies in Chile, including as a Non-Executive of Banco Scotiabank and Compania Molinera San Cristobal.



### **Assets**

LPI currently has four properties in Chile and Australia. The Company owned two other properties – one each in Strelley, Australia, and Centenario Salar, Argentina. The Company sold the Strelley properties in July 2020, but it will receive a 1% Net Smelter Return Royalty for any gold produced and also retains the mineral rights for lithium, caesium, tantalum, and tin. LPI sold 30% of its Centenario property to Marquee Resources in June 2019 and the remaining 70% to Vertex Lithium Corporation in May 2021.

LPI's MSB asset is among the most advanced development-stage lithium assets in the market. It is among very few assets whose DFS has been concluded and all the important approvals and permits, (including EIA) have been secured. LPI has devoted approximately 90% of its resources and efforts towards MSB's development. The Company's MSB asset is about to enter the construction stage with production expected to start in 2025.

LPI's other three assets are in the early exploration stage. Neither of the remaining properties is likely to enter production in the near future since LPI has prioritized MSB over these. Moreover, the Company is planning to spin out two of its properties in Western Australia – Greenbushes and Pilgangoora, to focus its resources exclusively on MSB. A brief overview of all four properties is as follows.

### Maricunga Lithium Brine - Chile

**Overview**: LPI's Maricunga Lithium Brine Project ("MSB project") is located approximately 170 km northeast of the mining town of Copiapo, 250 km from the Chilean coast, and adjacent to International Highway 31 which connects northern Chile and Argentina. The Maricunga Salar is regarded as the highest quality pre-production lithium brine project in South America, with characteristics comparable to the world-leading Atacama lithium brine deposit.

LPI is banking on its MSB project to become one of Chile's lowest-cost high-grade lithium producers and an eminent global producer of battery-grade lithium. MSB produced its first battery-grade lithium carbonate sample in 2018 with GEA Messo. This sample was produced using MSB brine from its pilot evaporation ponds operated for more than 2 years at the Salar. LPI expects to produce a high purity and a high-quality battery grade lithium carbonate.

MSB's mining concessions have been divided into two groups – OCC, also referred to as the Stage One concessions and New Code concessions, where future expansions will be based. The primary difference between OCC and New Code concessions is that the OCC were constituted under the 1932 Chilean mining law and do not require any special regulatory permits for lithium exploration. On the other hand, New Code concessions were constituted after 1979 and require additional regulatory approvals to exploit lithium including a Special Lithium Operation Contract ("CEOL") between the state and the Company and environmental permits. Out of the total, the New Code Mining Concessions account for 1,438 hectares and the OCC accounts for 1,125 hectares and contains about 54% of the total resources of the Company. This division of the concessions has helped the Company to reduce the uncertainty of the project due to regulatory approvals and licenses. This will enable the Company to independently start the construction relatively early on Stage One as it does not require any regulatory approvals. If the Company is successful in obtaining the CEOL and other permits and licenses, it will be able to substantially increase production in the future.

Currently, the project is under a JV named Minera Salar Blanco S.A. ("MSB") between LPI, Borda Group, and Bearing Lithium (TSXV: BRZ). LPI, Borda Group, and Bearing Lithium hold respectively 51.6%, 31.3%



and 17.1% equity interest in this JV. On June 22, 2022, the Company announced that it will consolidate the remaining 48.45% of the project, leading to a 100% ownership in the MSB project of LPI (subject to an approval by the shareholders). The Company believes that the consolidation will simplify the decision-making process for the MSB project, de-risk the funding pathway for Maricunga, and will increase the Company's ability to source funds from a wide range of sources as LPI will now have a complete autonomy over the project. As a result of this transaction, LPI shareholders' proportionate interest in MSB will now increase to 57.9% from the earlier 51.55%. LPI will issue 161.6 million new shares (valued at AUD 75 million) for MSB SpA's stake and 0.70 fully paid LPI share in exchange for all the outstanding shares of Bearing. As a result, the Company can issue up to 76.3 million shares to Bearing for its common shares and up to 18.2 million shares for the outstanding options and warrants.

The first DFS was conducted by Worley (previously WorleyParsons) for MSB on both the New Code Mining Concessions and OCC to a depth of 200-meters (out of the total depth of up to 800-meters in 2018) and was released in early 2019. The 2019 DFS supported LCE production potential of 20,000 tonnes per annum over a 20-year period. The Company has recently released the results of an updated DFS conducted only on the Stage One, which includes just the OCC. As per the revised DFS, the Stage One project will have an annual average production of 15,200 tonnes of battery-grade lithium carbonate for 20 years. This result is based on exploration work carried out to a depth of 400-meters as compared to the previous DFS released in 2019, which was only up to 200-meters. The DFS also estimates the CAPEX for Stage One project at USD 626 million which includes project development costs, indirect costs, and contingency costs. The estimate includes all the information contained on the proposals received as part of the international EPC bidding process carried out by the company in 2020, after accounting for the expected inflation on different materials and supplies.

The Company's current goal is to finalize the financing for the project by 2022. LPI is working with both international and Chilean financial institutions to raise capital for the development of the mine. Given the positive results from the revised DFS of Stage One project, the Company is continuing to work on the development of Stage Two at Maricunga. The tables below show the Measured and Indicated resource estimates only for Stage One as per the DFS released in 2022.

Mineral Resource Estimate for Lithium Metal (Li) and Potassium (K) only for Stage One						
	Measured (M)		Indicated (I)		M + I	
	Li	К	Li	К	Li	K
Area (Km²)	4	.5	6.	76	11.25	
Aquifer volume (Km³)	1	.8	1.8		3.6	
Mean specific yield (Sy)	0.09		0.12		0.1	
Brine volume (km³)	0.162 0.216		0.216		0.3	378
Mean grade (g/m³)	87	641	111	794	99	708
Concentration (mg/l)	968	7,125	939	6,746	953	6,933
Resource (tonnes)	154,500	1,140,000	203,500	1,460,000	358,000	2,600,000
Source: LPI's ASX announcement dated	September 29, 202	1	I	1		1



Mineral Resource Estimate for Lithium Carbonate Equivalent (LCE) and Potash only for Stage One						
	M + I Resources					
	LCE KCL					
<b>Tonnes</b> 1,905,000 4,950,000						
Source: I PI's ASX announcement dat	Source: IPI's ASX announcement dated Sentember 29, 2021					

Note: Lithium is converted to lithium carbonate (Li2CO3) with a conversion factor of 5.32 and Potassium is converted to potash with a conversion factor of 1.91

A new exploration target ranging between 400 meters – 550 meters of depth has been defined for further resource expansion below the Old Code concessions, and between 200 meters – 550 meters below the New Code concessions. This could potentially harness 1.2 mt - 2.1 mt of LCE.

LPI also has permits to produce KCl, which is a byproduct during the production of Lithium. As indicated in the table, the Company has a Measured and Indicated resource of 4.95 million tonnes of KCl. Until now, the Company did not plan to process and sell potash due to its depressed prices. However, the prices have gone up significantly in 2022, mainly due to the sanctions imposed by many countries on Russia. These sanctions have led to supply chain disruptions and thus a shortage of the salt in the market. With the prevailing prices, it will be profitable for the Company to process and sell KCl at no additional costs, thus effectively reducing its lithium cash operating costs.

The MSB JV's immediate focus is on completing the Stage One construction on the property and soon bringing it into production. MSB has signed an important non-binding MoU with Mitsui for this. The MoU grants offtake and financing rights for MSB's Stage One development as well as future development to Mitsui. The MoU also discusses a collaboration for facilitating the development and testing of the Direct Lithium Extraction ("DLE") technology at MSB for the production of lithium hydroxide.

LPI has appointed Deloitte as Lead Advisor for the new Environmental, Social and Governance ("ESG") program at Maricunga. Under the program, Deloitte will conduct a verification, evaluation, and gap analysis of the various processes at MSB. Deloitte will take measures to check whether operational, environmental, and social requirements align with legal and regulatory requirements. The aim of the project is to become a carbon neutral producer by using sustainable protocols in future lithium extraction operations.

**Mitsui MoU:** MSB signed the Mitsui & Co., Ltd. MoU for a strategic alliance to advance the Stage One development of the MSB Project in May 2021. MSB and Mitsui agreed on the following:

- Off-Take Rights: Mitsui will have the right to purchase up to 15,000 tonnes annually of high
  purity lithium carbonate battery grade production from Stage One of the MSB Project for 10 years,
  that can be further extended for two consecutive five-year periods. Under the agreement, parties
  can decide on a price structure and terms for the off take in order to be sufficiently bankable to
  support MSB's debt funding requirements.
- **Logistics and Distribution:** MSB plans to make use of Mitsui's global logistics and battery materials marketing expertise for the distribution of products.
- Project Funding: Mitsui will have the right to participate directly in the Stage One funding of the Project through a combination of equity-like and debt-like options.



- Future Expansion of the MSB project: Mitsui will have the first option for an off-take agreement
  to purchase a relevant portion of the future production of the expansion on the basis that it will
  provide a relevant portion of the necessary capital expenditure requirements for the future
  expansion of the MSB project, subject to the parties agreeing to the financing proposal.
- **Strategic Collaboration:** MSB and Mitsui will collaborate on developing efficient and environment friendly lithium processing technologies. Under the agreement, MSB will have to facilitate the development and testing of the DLE technology at the MSB project in collaboration with Mitsui and its technical partner. Mitsui has also advanced the due diligence process, and the Company believes that it will likely progress to a binding agreement once the due diligence is complete.

**Financing:** MSB is currently in its Stage One development and the forecasted capital expenditure for this stage is AUD 626 million, including approximately AUD 419 million direct development costs, AUD 145 million indirect costs, and 63 million contingencies. The financing for this stage would comprise an equal amount being raised from debt and equity. The Company plans to prioritize financing activities for the MSB project in 2021, with the objective of starting Stage One construction in 2023. MSB brought Mitsui as a strategic partner for equity / debt participation in this Stage One financing as well as for bringing Japanese government agencies like JBIC and JOGMEC with them. LPI is also looking for investors in mezzanine and other categories of debt.

**Production**: As per the DFS released in 2022, the Stage One LCE reserve is estimated to be 479,000 tonnes of LCE, out of which 75,000 tonnes is classified as Proven and 404,000 tonnes as Probable. Considering a 65% lithium process recovery efficiency, the total amount of recoverable LCE is 311,000 tonnes.

Mining Reserve for Pumped Lithium and Lithium Carbonate Equivalent for Stage One						
Concession	Category	Extraction	Brine Vol.	Avg Li Conc.	Li Metal	LCE
		Years	(Mm3)	(mg/l)	(tonnes)	(tonnes)
Old Mining Code	Proven	1-7	19	1.024	14,000	75,000
	Probable	1-7	13	1,024	19,000	102,000
	Probable	8-20	60	950	57,000	3,02,000
Total Production in 20 years					90,000	479,000

Production of Lithium Carbonate ("LCE") (Reflecting the 65 % Lithium Process Recovery Efficiency Post Pumping)								
Concession	Concession Category Extraction Brine Vol. Avg Li Conc. Li Metal LC							
		Years	(Mm3)	(mg/l)	(tonnes)	(tonnes)		
Old Mining Code	Proven	1-7	19	1,024	9,000	49,000		
	Probable	1-7	13	1,024	12,000	66,000		
	Probable	8-20	60	950	37,000	196,000		
Total Production in 20 years					58,000	311,000		

**Operations:** The technical engineering partner for MSB, GEA Messo, has received brine from Maricunga to test the production processes. GEA will be accompanied by Outotec and Eurodia in this process, which is expected to commence in early May. The target is to produce up to 10 kg of battery-grade lithium carbonate. Additionally, Worley and Bechtel have started updating EPC proposals, with a Final Investment Decision expected in Q4'22.



Electricity for the MSB project was secured through a permit granted in 2018 by the Chilean National Electricity Coordinator. According to MSB, all electricity will be from renewable sources via long-term contracts from solar power providers. The Stage One project has an average connected load of 13.7 MW of electric power. Furthermore, the production process has been designed to reduce the water consumption. MSB secured all its water requirements by 2018 through a long-term contract for the use of the CAN 6 water well at the Salar. This water well was approved within the environmental process for consumption of up to 60 lt /sec. MSB's expected actual consumption is 12 lt /sec and the project is expected to produce 25% of this water through its own process, implying that the water supply is likely to be adequate even for future expansions.

MSB employed Andinor, a contractor, for the water drilling program. A water well was drilled to a 200-meters depth in early April 2021 for fresh water supply to the project. The preliminary testing suggests that this well will be able to meet the project's water supply requirements. Additionally, this new well will serve as a backup for future requirements.

**Codelco JV:** MSB signed a non-binding Memorandum of Understanding ("MoU") with Chile's state-owned mining company Codelco for a potential JV for Stage Two study and development of the MSB project. This potential JV is still under review between the parties and is expected to progress at slow pace. In February 2020, MSB's Environmental Impact Assessment ("EIA") completed all permits required for LPI's 'Old Code' mining concessions. This means that the existing permits would allow for the construction of the project to commence immediately.

The consolidation of the mining concessions under the JV would give MSB access to the Entity's Special Contract for the Operation of Lithium ("CEOL"). This will result in the option of increasing the production capacity and / or the life of the mine beyond its expected 20-year life span. Making the additional mining concessions operational will be relatively quick once the Stage Two commences because exploration for resources and reserves, which is the slowest part of the process and represents a major portion of the total effort, is already done.

### Tabba Tabba - Australia

LPI acquired the Tabba Tabba lithium exploration tenements on the greenstone belt in Western Australia in October 2015 and owns 100% of these tenements. Extensive soil survey over the belt have demonstrated lithium concentrations of up to 689 parts per million ("ppm") in addition to caesium, tantalum, tin, and beryllium, which indicate the presence of productive lithium-caesium-tantalum ("LCT") pegmatites.

A 31-hole drilling program for 3,081m was carried out in 2019 targeting outcropping and sub-cropping of pegmatites associated with the 4.3 km long zone of elevated lithium in soils. The program tested pegmatites in the upper 100-meters of the target area and demonstrated the presence of a large system of elevated lithium. All tracks and pads constructed for this drilling program have been rehabilitated. No additional pegmatites in this area were drill tested during this program. Initial results warrant further exploration. Additionally, the Company conducted a broad-spaced (300 x 30 m) regional soil sampling program over the entire Tabba Tabba tenement. During the soil sampling program, a total of 800 samples were collected to create a geochemical dataset of the tenement. These samples have been sent to LabWest to be analyzed through the UltraFines process. Further exploration will be carried out in a section of the property that was previously not accessible during the 2019 drilling program. The Company has budgeted approximately AUD 400,000 for drilling at this location.



### Pilgangoora-Pilbara - Australia

LPI acquired the Pilgangoora tenement in September 2015 and owns 100% of it. This tenement is situated adjacent to lithium pegmatite deposits owned by Pilbara Minerals and Altura Mining, and forms one of the world's largest lithium pegmatite resources together with these deposits. LPI explored the lithium pegmatites in continuation of the same sequence of rocks immediately west of the tenements held by these companies.

A review of the Pilgangoora tenement (E45/4610) was completed in September 2021 and it highlighted a young, hot granite within one of the Greenstone Belts, indicating potential hosting of lithium. A soil sampling program has also been completed on the prosect, where 544 samples were collected. The sampling was done to define previous lithium anomalies associated with the greenstone belts and also find the potential of gold within a younger granite and its contact aureole. The Company has planned to demerge its Pilgangoora asset and create a new subsidiary for its hard rock WA assets. LPI has submitted applications to the Department of Mines, Industry, Regulation and Safety for E45/4610 for further works in the winter months of 2022.

#### Greenbushes - Australia

The Greenbushes tenements which span across 350 sq. km. and are 100% owned by LPI, contain large strike lengths of the same rock suite that hosts the Talison Greenbushes lithium mine, which is the world's largest lithium producer. In late 2019 and early 2020, a soil sampling and mapping program was conducted, and an additional 174 laterite and soil samples were collected from the forestry areas that make up most of the target area of the Greenbushes tenements. Sampling results were encouraging, with elevated lithium concentrations of up to 71 ppm found, along with other trace metals. Subsequently, the Company submitted to the WA Department of Mines and received approval for POW on these tenements in 2020. The approval is valid for four years and will enable further exploration activity in areas of interest that were identified in the field work. However, the Environment Management Plan approved by the WA Department of Conservation and the Department of Mines, Industry, Regulation, and Safety ("DMIRS") only allows field work in the forest areas to be conducted in the summer months.

The Company had stopped exploration work on this property in the wake of the Covid-19 outbreak. However, it resumed exploration work in February 2021.

LPI will be commencing an extensive exploration and drilling program at Blackwood Prospect and East Kirup tenements which are immediately adjacent to Talison Lithium's Greenbushes lithium mine. A five-year term extension to the term of tenements hosting the Blackwood Prospect – E70/4774 and the East Kirup Prospect – E70/4763 have been granted by the Department of Mines, Industry, Regulation and Safety (DMIRS). The Company is planning to demerge this asset by the first half of 2022, to focus exclusively on its flagship MSB project and create a new subsidiary for its WA assets.

### **Blackwood Prospect**

The Blackwood Prospect is the southernmost of the two properties owned by LPI and is located on the regional co-incident magnetic and gravity structure which is part of the Donnybrook Shear Zone ("DSZ"). Greenbushes' pegmatite is located along north-west subsidiary structures of the DSZ. The DSZ and its subsidiary faults do not have a strong surface expression as they are hidden by soil and/or laterite. The Company has completed a drone magnetometry survey over the prospect which will provide high resolution, accurate data. This data is being processed to provide the details of the structural architecture DSZ. This will allow LPI to ascertain where pegmatites are most likely located and focus its future work in



these areas. Previous samples collected by LPI within the DSZ at the Blackwood Prospect showed elevated lithium (253 ppm), rubidium (2048 ppm), tin (95 ppm). In addition, the Company also discovered mafic host rocks which are anomalous in arsenic (110 ppm) and consistent with the Greenbushes model.

In order to test for concealed pegmatites, an UltraGPR ("Ground Penetration Radar") orientation was conducted across several parts of the Blackwood prospect. The GPR proved to be successful over known pegmatites. A 30 MHz Ultra GPR unit that was suited to greater depths was used for this survey across east-west traverses to map and identify sub-surface bodies that may be correlated with a pegmatite.

An orientation soil sampling program of 42 samples on 300m x 300m spacing was completed at a newly defined target at the southern end of the Blackwood Prospect. The soil sampling was interpreted NE trending dilutional jogs along the NW orientated structures. Small outcrops of pegmatites had already been identified within the dilutional jogs. Once the results of the orientation sampling have been returned, an infill program will be planned.

### **East Kirup Prospect**

The Fauna survey and RC drilling program for the initial 1,600m of the East Kirup Prospect was initially planned for Q4 2021. However, the drilling program planned in December was delayed due to drilling contractor capacity limitations and the program planned in January has been delayed due to COVID.

As per the initial surface geochemical sampling done along the DSZ, the defined area has a four-kilometer strike length lithium-tantalum-niobium-tin-arsenic anomaly. A drilling company has been engaged, with drilling to commence in December. The RC drilling will be conducted along existing tracks which run perpendicular to the trend of the DSZ and the defined anomalism. This work will assist in developing an understanding of the geology along the Bridgetown-DSZ as well as examining the geochemical anomalies identified by the laterite program. The conditions set out in the CMP, however, restrict the drilling to the existing tracks and to a depth of 100m, and to only occur in dry conditions. The completion of the program will be weather dependent. The approval for 1,600m of this work is already granted with program of work for a further 1,600m pending approval. Detailed flora surveys and assessment has begun at the prospect and two surveys have been completed as of Q4'22. These surveys will continue for two seasons and will provide detailed information of the environment and help the Company to devise a conservation management plan ("CMP").

### **Nannup and Wilga Project**

LPI acquired the Nannup project and Wilga project through its acquisition of CMC Lithium announced by the Company on July 5, 2022. Both these projects have two tenements, one granted and one under application. In the short-term, the Company will work on obtaining permits for the remaining two tenements. The Nannup project is spread across an area of 224 km² and the Wilga project is across 143 km². These tenements will increase the Company's overall holding in WA and are of strategic importance for the Company's exploration program in the Greenbushes region. The following table summarizes the details of the two projects:



Tenements held by CMC Lithium							
Project Status Exploration (\$) Area							
Nannup							
E70/5684	Pending	77,000	77				
E70/4845	Granted	15,000	1				
Wilga							
E70/4846	Granted	50,000	24				
E70/5281	Pending	26,000	26				
Source: Press Release,	dated July 5, 2022						

**Exploration Activity by CMC:** CMC has completed soil and laterite sampling and other exploration techniques for LCT pegmatites on E70/4845. Although the drilling targets have been identified, the necessary permits are yet to be obtained on the tenement. Within E70/4846, 140 laterite samples were taken and an anomaly was defined on a linear NW trend extending northwards into E70/5281. LPI plans to continue air core drilling with deeper RC drilling to evaluate the stratigraphy and targets for undercover pegmatites. Sampling conducted by Commonwealth Scientific and Industrial Research Organization (CSIRO) showed that there is a 100+ ppm arsenic (As) anomaly over a 2 km length in the northern part of the E70/5684.

**Eastern Goldfields:** LPI has agreed to purchase E15/1772 and E31/1250 tenements spread across 115 km², in the Eastern Goldfields region. Both these tenements are expected to contain lithium bearing pegmatites and are also in line with the Company's exploration model for Rare Element Pegmatites. The payment consideration for the acquisition includes a payment of \$75,000, 389,611 shares to Lysander Lithium, and a 1.5% NSR royalty for any minerals produced on the two tenements.



# **Industry Analysis**

### **Lithium Demand**

The global Lithium market size was valued at USD 2.7 billion 2020 and is expected to reach 8.1 billion at a CAGR of 14.8 % during 2021-2028. Out of all the segments, lithium carbonate has the largest share of over 58%, in terms of volume<sup>i</sup>. Lithium is used in several industries, including batteries, ceramics and glass, and lubricating greases. The highest demand for lithium comes from battery manufacturers, who accounted for 71% of total demand in 2020. This was followed by ceramics and glass (14%), lubricating greases (4%), continuous casting mold flux powders (2%), polymer production (2%), air treatment (1%), and others (6%)<sup>ii</sup>.

**Global Lithium Consumption to Grow Significantly:** Lithium consumption has increased significantly from 65,000 tonnes of LCE (12,000 tonnes of lithium content) in 2000 to 297,000 tonnes of LCE (82,000 tonnes of lithium content) in 2020, particularly on the back of extensive use of rechargeable lithium batteries in electric vehicles (EVs), portable electronic devices, electric tools, and grid storage applications<sup>iii</sup>.

While all these industries are expected to continue generating high demand for lithium in the coming years, the highest demand growth is expected to come from the EV industry. According to Benchmark Mineral Intelligence, in 2015, 32% (55,680 tonnes of LCE) of the total lithium consumption of 174,000 tonnes of LCE was used for manufacturing lithium-ion batteries. While the total consumption of lithium is forecasted to go up by 129% from 2015 levels to 398,000 tonnes of LCE in 2021, the share of lithium-ion batteries is forecasted to go up to 67% (266,660 tonnes of LCE), implying a growth of 379% from 2015 levels<sup>iv</sup>. Consequently, the demand for lithium compounds (lithium carbonate, lithium hydroxide, lithium concentrate, lithium metal, butyl lithium, lithium chloride) that are directly used in batteries is projected to grow from USD 5.3 billion in 2020 to USD 13.5 billion by 2025, at an implied CAGR of 20.6%<sup>v</sup>.

**APAC Leading Global Lithium Demand:** The highest demand for lithium has traditionally come from Asia Pacific (APAC) because it is the manufacturing hub for automobiles, electronics, and other industries that consume lithium the most. APAC accounted for 56.3% of the total demand for lithium (in US dollar terms) in 2020. China, being the largest battery manufacturer in the world, is among the world's top consumers of lithium. It accounted for 40% of APAC's volume share of the battery market in 2019 and is expected to continue dominating the world Battery market in the coming years owing to its low wage rates, large manufacturers, and high lithium reserves.

China's lithium reserves were nearly 30 times that of the US in 2018. China's continued dominance of the lithium battery market implies that the demand for lithium is expected to continue being the highest in the APAC going forward. APAC also dominates other geographies in terms of lithium reserves, primarily due to Australia having 25% of the world's total reserves – the highest after Chile.

**Europe Catching Up Fast on The Back of German EV Production:** Europe was the second-largest market for lithium in 2020 thanks to its large and growing EV manufacturing sector. Germany alone accounted for 18% of the world's EV production in 2019 and its share is expected to increase to 29% by 2024, as it surpasses China and the US to become the world's largest EV manufacturer. German automobile giant Volkswagen recently announced that its demand for batteries in Europe alone will increase by 240 gigawatt-hours (GWh) by 2030. This is more than the combined requirement of all automakers globally in 2020.



Battery production will have to increase significantly to keep up with the demand from EV manufacturers, especially now that battery manufacturers have been able to cut prices significantly. BCG estimates that a tenfold increase in the production of battery cells and their key materials, such as lithium and nickel, will be required by 2030<sup>vii</sup>. With increasing exploration and production activity, producers of these battery materials might be able to match demand over the long term. However, supply bottlenecks might develop in the short run, keeping lithium prices high and reducing the momentum of decline in battery prices. Lithium mining activity is at an all-time high as existing producers expand capacity and new producers enter the industry to make the most of soaring lithium prices.

### **Lithium Production**

There was a historical upsurge in lithium exploration and mining activity in the mid-2010s due to expectations of a continued increase in the demand for lithium from battery manufacturers. Global production of lithium has increased at a higher rate than increase in demand since 2018, resulting in an oversupply of lithium and a fall in lithium prices. Lithium producers tried to stem falling lithium prices in 2020 by cutting production by 5% to 434,000 tonnes of LCE (82,000 tonnes of lithium content) compared to 456,000 tonnes of LCE (86,000 tonnes of lithium content) in 2019<sup>viii</sup>.

Traditionally, lithium was extracted from lithium brine deposits and hard rock spodumene deposits. Oil and gas operators have now also started extracting lithium from wastewater left in reservoirs. Approximately two-thirds of the world's lithium reserves are in the 'Lithium Triangle'. According to the US Geological Survey 2021, approximately 45% of global lithium reserves are in Chile, followed by Australia (23%), and Argentina (9%).

Regulatory Obstacles Stifling Lithium Production in Chile: According to the BP Statistical Review of World Energy, despite having 48.5% of the world's lithium reserves, Chile only produced 23.9% of world's total lithium output in 2020 and was a distant second behind Australia, which produced 46.4% of world's total lithium output despite having a much smaller 24.8% of the world's total lithium reserves<sup>ix</sup>. Although there is strong investor interest to start new projects and expand existing projects in Chile, no new project has come online in the country in recent years due to its regulatory opaqueness. Among investors' chief concerns is the obligation to either partner with the state for lithium mining (as MSB is trying to do through a potential JV with Codelco) or obtain a special mining permit. The path to obtaining the mining permit, as well as an environmental permit that is mandatory for selling or exporting lithium from Chile, is unclear and unpredictable.

Currently, only seven projects in the country have received approval for exports and out of these only two projects owned by sector leaders SQM and Albemarle have utilized their permits. The remaining five projects, including two Codelco projects, are yet to start production. The concerned regulator CCHEN as well as the mining ministry have given repeated assurances that they will review the procedure and shed the opaqueness. The ministries of mining and economy have also taken part in a review of CCHEN's protocols. However, no concrete steps have yet been taken to address investor concerns.

**Australian Miners Expanding Aggressively to Meet Long-Term Demand:** Recent announcements from leading lithium miners indicate that they are working aggressively to meet the expected manifold increase in long-term demand and benefit. Australia's top miners Mineral Resources Ltd, Orocobre Ltd, and Galaxy Resources filed reports in late April 2021 announcing new projects and signaling strong earnings with covid-related stimulus measures buoying the real economy and the demand for EVs.

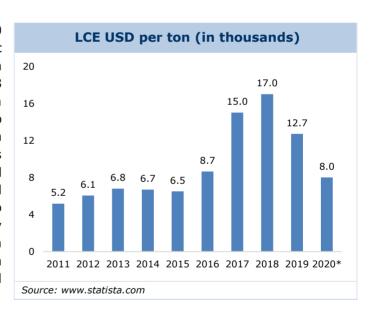


Orocobre (ASX: ORE) announced that lithium carbonate production from its Olaroz operations in Argentina is sold out until the end of June 2022 and more will be available in H2′22 as an expansion comes online. Mineral Resources (ASX: MIN) announced that its lithium hydroxide plant in Western Australia, which it holds through a 40:60 JV with Albermarle, was on track for commissioning in the H2′21. Galaxy Resources (ASX: GXY) released detailed plans to produce lithium carbonate at its Sal de Vida project in Argentina and updated investors on the amount of lithium reserves it has. It plans to produce 10,700 tonnes per year of battery-grade lithium carbonate starting 2022.

**Orocobre-Galaxy Merger Could Further Increase Australia's Dominance:** Companies in the Lithium mining space have also been actively engaging in inorganic initiatives such as JVs, M&A deals, and asset acquisitions to benefit from rising lithium prices by increasing production capacity and fast-tracking projects. The most significant recent transaction under this theme is Orocobre's acquisition of Galaxy Resources in an AUD 4 billion all-stock deal. The deal was finalized in April 2021 with an objective of accelerating growth projects, materially increasing liquidity, and improving access to capital for further development and expansion. The deal will create the world's fifth-biggest lithium producer with projects across Australia, Canada, and South America. The combined entity will have the potential to expand lithium carbonate production from 40,000 to 100,000 tonnes per year in the next few years. The combined entity will subsume several big development projects that the companies were planning, including projects in Olaroz and Sal de Vida in Argentina and James Bay in Canada, which is forecasted to require capex of over AUD 1 billion.

### **Lithium Prices**

Lithium prices increased sharply from USD 5,180 per metric ton in 2011 to USD 17,000 per metric ton in 2018, primarily due to strong demand from battery manufacturers. However, between 2018 and 2020, the growth in lithium production outpaced demand, resulting in a fall in price to USD 8,000 per metric ton in 2020. Lithium producers tried to support the falling prices through a production cut in 2020 but found limited success due to the Covid-19-induced fall in global demand<sup>x</sup>.Lithium prices rebounded in 2021 due to demand the increasing from battery manufacturers that cater to the EV and high-tech devices industries. Spot lithium prices in China started recovering towards the end of 2020 and this recovery accelerated in Q1'21.



Lithium carbonate prices soared about 496.7% in 2021 on strong demand for electric vehicles<sup>xi</sup>Macquarie believes that with Chinese lithium carbonate prices up 110% and lithium hydroxide prices up around 40% from the beginning of 2020, prices could go up further in the coming months. Macquarie forecasts a 30% to 100% price increase over the next four years, as EVs begin displacing approximately 1 billion internal combustion engines globally. Macquarie expects that the market will start facing a lithium deficit starting 2022 with material shortages emerging from 2025. According to Macquarie, this deficit will push spodumene prices to above USD 720 a tonne and significantly increase lithium carbonate and lithium hydroxide prices going forward. Macquarie expects lithium carbonate to remain above its "incentive" price



of USD 13,000 per tonne and lithium hydroxide to remain comfortably above USD 16,000 a tonne going forward<sup>iii, xii, xiii</sup>.

Lithium prices are expected to remain strong due to the disbalance in demand and supply. According to S&P Global Market Intelligence, lithium chemical supply is forecasted at 636,000 mt lithium carbonate equivalent in 2022, increasing from an estimated 497,000 mt in 2021 and 408,000 mt in 2020. S&P forecasts a deficit of 5,000 mt LCE in 2022. In 2020, there was a surplus of 66,000 mt due to decrease in demand because of slowed economic activity attributing to Covid-19, which was reduced to 8,000 mt in 2021. This current deficit and increase in prices has incentivized existing suppliers to expand their production and restart dormant mines. Recently, Albemarle's MARBL joint venture with Minerals Resources in Western Australia announced plans to restart one of the Wodgina mine's three 250,000 mt peryear processing lines in Q3′22. XIV

### Social and Environmental Impacts of Lithium Mining

The ecological impact of lithium production is a topic of constant concern for environmentalists and is inspiring end-use industries to look for lithium alternatives. It is estimated that approximately 500,000 gallons of water is used to produce one tonne of lithium, which significantly depletes water resources in areas of water scarcity.

Most of mining activity in Chile is concentrated in the northeast, which is among the driest regions in the world. It is estimated that the mining industry consumes enough water annually to provide for 75% of the needs of Chile's population. In regions like Chile's Salar de Atacama, mining activities consume 65% of the water supply that local communities rely on.

Toxic chemicals, such as hydrochloric acid, that are used in the separation process for lithium contaminate local water supply and air quality. Companies, especially in China, are working on recycling and reusing lithium-ion batteries as an option to reduce the environmental impact of lithium mining. A BCG analysis suggests that the economics of EV battery recycling at scale are attractive, while generating profits from reuse is likely to be much harder. Alternatives to lithium-ion, such as sodium-ion, zinc-ion, and hydrogen cell are also under active research and development. However, most of these alternatives are in the development stage and, despite their long-term potential, are unlikely to pose a serious competitive threat to lithium-ion in the short and medium term.

### **Recycling and Reusing Lithium Batteries**

Recycling and reusing lithium-ion EV batteries are new trends with strong growth potential, given their economic lucrativeness and their potential of enabling better use of resources and reducing carbon emissions by reducing the need for lithium mining over the long term. Recycling is a specialized method of recovering valuable metals such as cobalt, manganese, nickel, and lithium from battery cells and selling them to manufacturers for use in future batteries. Reusing involves repurposing battery cells, without dismantling them, for a second (mostly stationary) use. This second use is typically in combination with new power electronics, software, and housing structure.

The useful life of lithium-ion batteries used in EVs is around ten years on an average suggests a recent analysis by Geotab. Newer models are likely to have an average useful life of over 20 years or over 300,000 miles. This is primarily a function of the number of charge cycles, the intensity of charge cycles, and the manufacturing quality. These batteries are no longer fit for use in an EV once their rated capacity



fall below 80% of the original. At this stage, lithium-ion batteries typically enter the waste stream i.e., they are placed in a disposal facility, such as a landfill, and its remaining value is never recovered.

According to BCG, more than 32 million EVs are currently on the roads globally, including 8 million fully electric passenger vehicles and 24 million partially electrified vehicles. Batteries of close to 1 million of these passenger vehicles (excluding commercial EVs and two-wheelers) are nearing the end of their useful life, with an estimated capacity of 4 GWh. The number of passenger EVs is likely to exceed 300 million by 2030 and nearly 4 million EVs are expected to be retired in 2030, with a combined originally rated capacity of nearly 100 GWh. Regulations regarding what happens to the battery after its first use are evolving in most countries and are increasingly mandating that these batteries be recycled and reused rather than discarded, e.g., the EU's End of Life Vehicles Directive.

Commercial-scale recycling of EV batteries is currently the most established in China. The country is witnessing the emergence of clear market leaders after years of high fragmentation. Battery material suppliers GEM, Huayou Cobalt, and Ganfeng Lithium currently hold the largest market shares. EVs, cathodes, cells, and battery packs manufacturer, BYD, and a subsidiary of cathode manufacturer CATL, Brunp Recycling, are other major players.

Leading EV battery recyclers outside China include VW, Umicore, SungEel, and 4R Energy, which is a JV between Nissan and Sumitomo. New players, such as Li-Cycle, Battery Resourcers, Deusenfeld, and Redwood Materials are experimenting with a wide range of technologies for pretreatment and metal recovery. However, recycling is still a long way from becoming an established industry and posing a serious potential threat to lithium miners.

### **Alternatives to Lithium Batteries**

Given the adverse environmental impacts of lithium production and expectation of a lithium shortage causing a sharp rise in lithium prices over the next four years, active research is underway for alternatives to lithium-ion batteries. While none of these alternatives is likely to become a major competitive threat to lithium-ion batteries in the short and medium term, they could emerge as strong competitors in the long term. Some of the front runners to compete with lithium-ion in the long-term are as follows:

**Zinc-ion:** Zinc-ion batteries are likely to be the first major competitor to lithium-ion. Zinc-ion's most significant differentiators from lithium-ion are their safety and supply chain predictability. A significant part of the production process when using lithium has to be conducted in a highly controlled atmosphere because it violently reacts with water. This makes the process expensive and complicated. Zinc-ion batteries are not constrained in this way because they are water-based batteries.

Additionally, zinc-ion batteries can move from the manufacturing line to the customers faster than lithium-ion batteries because they do not require formation cycling at the end of their life. Additionally, zinc-ion is built using materials that are available more abundantly and at lower prices than those used for lithium-ion. This means that zinc-ion can be produced more widely than lithium-ion, for which there is overdependence on countries like China, and foster greater supply chain predictability. California-based Salient Energy is among the zinc-ion innovation leaders. The Company claims that its zinc-ion based energy-storage technology will be at least 30% less expensive, as well as safer and longer-lasting than standard lithium batteries.

**Sodium-ion:** Research & development work done on sodium-ion until now has mostly been for non-EV purposes, although there have also been some successes in the EV space. A pigment known as Prussian



Blue is a key component in sodium batteries. This component is cheap and abundantly available, and its chemical structure is ideal for electrodes, which store and release energy in a battery. Prussian blue allows ions to pass back and forth more easily than other materials such as lithium. This makes its electrodes more durable than lithium-ion batteries, whose electrodes are carbon and metal-based.

Although prices of lithium-ion packs have fallen almost 90% since 2010, sodium-ion batteries are most cost-effective because their main ingredient sodium is the sixth-most-abundant element on Earth. In contrast, lithium-ion batteries are made from a combination of expensive metals such as nickel, and cobalt etc. that can constitute close to 60% of the battery cell's cost, according to BNEF. Additionally, sodium-ion batteries are faster to recharge than lithium-ion batteries and can deliver short bursts of energy in quick time.

Natron Energy and Faradion are among the eminent companies developing sodium-ion batteries. Natron is developing batteries for critical stationary applications including data-center UPS, electric forklifts, smart grids/microgrids, and renewables support. The company's batteries can be fully charged or discharged in minutes and are highly cost-efficient. Natron has raised close to USD 70 million from investors including Chevron Corp, as well as received USD 19 million in Department of Energy funding in April 2021.

Faradion is a UK-based developer of sodium-ion batteries. It recently signed supply agreements for Australia's residential energy storage market and EV batteries for commercial vehicles in India.

**Hydrogen fuel cells:** Hydrogen produces water as a byproduct and is much more efficient and cleaner than lithium when it comes to producing and recycling it at the end of the vehicle's life. This is why major automobile manufacturers, led by Toyota are working on hydrogen fuel cells as an alternative clean energy product. Hydrogen fuel cells can be used to power anything that uses electricity, such as EVs and electronic devices and these fuel cells don't need to be recharged as long as they have hydrogen fuel. Energy efficiency provided by hydrogen fuel cells for EVs is two to three times more efficient than an internal combustion engine fueled by gas and the refueling time averages less than four minutes<sup>xv</sup>.

The most significant hurdle that is keeping hydrogen cells from becoming a major clean fuel technology is that at present hydrogen is mostly produced using fossil fuels. Several research efforts are underway globally to convert water into hydrogen using a variety of materials, such as modified algae. However, present methods are neither environmentally friendly nor cost-effective. There are some companies that are trying to produce hydrogen using alternatives like biomass but these companies currently operate at a very small scale.

Green hydrogen, which is created using renewable energy instead of fossil fuels, is emerging as the most promising option. The electrolysis method that splits water into hydrogen and oxygen using an electric current in an electrolyzer is one of the popular methods of producing green hydrogen. Green hydrogen is also produced from solar and wind energy. The use of green hydrogen is expected to increase significantly in future because energy from hydrogen can be used and stored in gas or liquid form and quickly converted into electricity or fuel<sup>xi</sup>.

Extensive use of green hydrogen in areas that require high energy density fuel or intense heat, such as transportation, electricity generation, manufacturing, aviation, shipping, long-distance trucking, and steel production, is considered essential to meet the goals of the Paris Agreement because green hydrogen can help reduce greenhouse emissions<sup>xi</sup>. Although green hydrogen is being pushed by public policy in Europe as well as the US, a lack of appropriate storage and transportation infrastructure such as transmission lines and pipelines are preventing its wider adoption<sup>xi</sup>.



**Solar panels:** The consistently improving capabilities of solar panels have made them a viable clean energy option for several static purposes. However, they are still not efficient enough to power EVs. Although, with Tesla and other major automobile companies working on viable solar roofs, solar panels seem set to emerge as a major alternative to lithium-ion batteries to power EVs. It is possible that the whole surface of the car would be a solar panel in the future. However, this is likely to requires years of effort and fine tuning, implying no immediate threat to lithium-ion battery manufacturers.

**Solid state batteries:** The mechanics of solid state batteries are similar to solid state drives (SSDs) used in laptops, and has the potential to impact the performance of EVs just as SSDs impacted the data storage capabilities of laptops. In addition to their compact packaging and capability to improve the energy efficiency of EVs, solid state batteries are also considered to be much safer than contemporary batteries. These batteries are claimed to reduce fire risk to almost zero, be more durable, and perform well even in inhospitable weather conditions.



# **Risk Profile Analysis**

### 1. Operational Risk

LPI's current project portfolio consists of projects which are currently in the exploration stage except MSB, where construction is expected to commence by early 2023. The success of these early-stage exploration projects depends on discovering high-grade lithium reserves and establishing the economic viability of production, leading to a high degree of uncertainty for the Company. To its credit, In January 2022, LPI released a revised DFS only for Stage One of MSB, confirming significant Proven and Probable LCE reserves. According to the DFS, the Company is expected to start production in 2026, with an average annual production of 15,200 tonnes of LCE per annum. Once the Company starts generating revenue from MSB, its dependence on external sources of finance will reduce and it will be able to direct its excess cash towards the further development of MSB and exploration on other assets. Until MSB becomes operational, the Company's operations will be dependent on finding mineralized exploration targets, positive exploration results, and arranging finances to support its future growth. For these reasons, we believe that the Company has a MEDIUM operational risk profile.

### 2. Political and Regulatory Risk

LPI's flagship MSB JV as well as many of its other assets are in Chile. The Company has ambitious long-term expansion plans in Chile in partnership with Mitsui, including significant investments in MSB as well as other lithium mining and lithium product projects. Although Chile has enjoyed relative geopolitical stability in recent times, its unstable geopolitical history exposes LPI to a small degree of political risk.

Additionally, Chile has acquired a reputation for opaque rules governing the lithium mining sector because of which no new project has come online in the country in recent years and the country is a distant second in global lithium production despite having almost half of the world's lithium reserves. The relevant regulatory body, CCHEN, as well as the country's ministry of mining have repeatedly affirmed their commitment to improving transparency, but no tangible steps have been taken yet and none seem imminent.

Fortunately for LPI, MSB has received all the necessary permits in Chile, including the 30-year CCHEN approval and the all-important Environmental Approval (EIA). MSB was the first new mining project to receive EIA in 5 years in Chile and took three long years to prepare, submit, and obtain it.

We believe that MSB is relatively immune to political risks and bureaucratic inefficiencies. However, LPI and Mitsui might have to endure significant regulatory unpredictability as they strengthen their partnership and make tangible commitments in Chile's Lithium sector. Consequently, we believe LPI has a MID-LOW political and regulatory risk profile.

### 3. Financing Risk

LPI is currently in the pre-revenue stage and is unlikely to generate any meaningful revenue to fund its operations until MSB comes online. The Company has funded its research, exploration, and development activities by periodically tapping capital markets. LPI and other JV partners have been successful to have reached a mutually beneficial MoU with Mitsui. Although the MoU is an encouraging first step as it is comprehensive and sets a defined framework for the Stage One development of the MSB project, it is non-binding. The parties have been working on it for over two years and key terms



(such as the structure) might not be finalized imminently since the ensuing due diligence process might take time to complete.

The Company will also need to raise additional capital to finance future expansions of MSB as well as to finance its growth plans that include acquiring new assets and vigorously resuming exploration and drilling work at some of its properties after a Covid-related pause. Although the Company is hopeful of securing a strong financial partner for most of its growth plans by converting its non-binding Mitsui MoU to a binding partnership in due course, its financial risk cannot be completely ruled out. The ability to convince Mitsui and other debt and equity investors about the viability of the Company's future plans and the management's ability to execute these plans successfully would be critical to raise these funds. Consequently, we believe LPI has a MID-HIGH financing risk profile.

### 4. Environmental Risk

LPI currently does not face any major environment risk since MSB has already obtained EIA and, as per current Chilean regulations, neither requires renewing it nor obtaining any other environmental permit. However, since regulations in Chile are not firmly established and procedures are known to be interpreted and applied differently by officials, this risk cannot be completely discounted. The Company has also hired Deloitte to ensure a robust Environmental, Social and Governance ("ESG") program at Maricunga. Deloitte will conduct a verification, evaluation, and gap analysis of all MSB process to ensure that the project is aligned with the operational, environmental, and social requirements. Additionally, LPI might be exposed to a higher level of environmental risk in the future once its Mitsui partnership crystalizes and starts investing in new projects. Since these investments are a long time away, we believe that LPI's environmental risk profile is LOW.

### 5. Key Personnel Risk

LPI's leadership team is knowledgeable and has decades of experience in the mining industry, including extensive experience of managing in-production assets at several leading organizations. The Company also has a separate Technical Committee, including experienced industry experts, consultants, engineers, and professors, to oversee the exploration and mining operations in Chile and Australia. However, the Company's leadership has no experience managing an in-production business as a single team yet. Its real test will come when LPI starts producing and marketing lithium because this is when the leadership will have to come together to take tough decisions and face stiffer challenges. Consequently, we believe that the Company has MEDIUM key personnel risk.



# **Financial Analysis**

LPI has not generated any significant cash flows yet because it has been focusing on acquiring and exploring promising mining assets, with the expectation of generating cash flows once lithium reserves are discovered and these assets enter production. The Company expects Stage One of MSB to enter the developing stage and start generating cash flows by 2025. LPI has been incurring substantial operating expenses, which is typical of pre-production mining companies. The major costs until now have been exploration and development related. LPI will also require significant capital to meet its MSB obligations and support its own growth plans going forward, which is typical of pre-production mining companies. The Company's ability to sell its vision to investors and its execution capabilities will be critical to raise these funds.

**Revenue and Profitability**: LPI's financials are primarily driven by MSB because it is the closest to entering production and is the only project that is expected to generate revenue in the short and medium term. Since MSB is currently a pre-revenue project with heavy pre-production costs, LPI is also currently in deep losses. MSB incurred AUD 5.3 million in pre-production costs in FY 2022 and LPI recorded its current proportionate share (51.6%) of these JV losses, i.e., AUD 2.7 million. LPI has initiated the consolidation of 100% of MSB, which is expected to be completed by November.

We have assumed in our projections that MSB will start generating revenue and profits from FY 2026 onwards, resulting in LPI's proportionate share of these profits and dividends reflected on its income statement. However, we expect the potential dividend payout to be 100% from FY 2036, giving MSB a healthy liquidity position. However, these expectations are based on the assumption that lithium prices will continue to remain high and are highly sensitive to volatility in lithium prices.

LPI's operating expenses other than net foreign exchange (which primarily includes employee costs and administrative costs) increased slightly from AUD 2.7 million in FY 2021 to AUD 3.0 million in FY 2022. We expect LPI's operating costs to remain relatively stable between AUD 3.5 million to AUD 4.0 million between FY 2023 to FY 2025 unless the Company acquires new assets or accelerates exploration and development work on one of its existing assets.

LPI made a Net Loss of AUD 7.2 million in FY 2017 and this loss increased to AUD 12.6 million in FY 2022. Out of the AUD 12.6 million, AUD 6.9 million is attributed to Foreign Exchange Loss. Hence, we expect the Company's losses are likely to decrease going forward and reach AUD 3.9 million in FY 2025. We expect the Company to become profitable from FY 2026 when MSB starts operations and generate a Net Profit of AUD 71.3 million during the year. We expect the Company's profitability to continue increasing each year starting FY 2026 unless it invests aggressively in developing its other assets.

**Capital Requirement:** LPI's share capital increased from AUD 77.4 million in FY 2021 to AUD 89.4 million in FY 2022, as the Company primarily relied on equity capital to meet both short-term and long-term capital requirements. The Company has raised a small amount of debt in the past and was prompt to repay it. The Company currently has no outstanding debt on its books and is not planning to raise debt in the future.

LPI has tapped into the capital markets thrice since its IPO in 2016 and might have to do so again in the next three years before it starts commercial production. The Company will also invest its proportionate share of equity required for the construction for Stage One MSB. The Company will also require a significant amount of capital for exploration work at its other assets and for the acquisition of new assets. With such a significant amount of additional capital required to run the business, LPI's ability to convince investors about the business's future potential and the Company's ability to manage the execution phase will be critical. Although this is typical of early-stage mining businesses, the inability to raise enough capital could be a significant threat going forward.



### **Income Statement - Historical**

(All figures are in AUD thousands)	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Revenue	(4,078)	(5,545)	(8,826)	(3,600)	(1,660)	(2,731)
Expenses						
Employee Benefit Expense	1,087	1,964	1,532	1,577	1,606	1,191
%age of Revenue	-26.7%	-35.4%	-17.4%	-43.8%	-96.7%	-43.6%
Occupancy Costs	77	92	133	155	113	168
%age of Revenue	-1.9%	-1.7%	-1.5%	-4.3%	-6.8%	-6.1%
Depreciation and Ammortization Expense	0	3	6	10	8	3
%age of Revenue	0.0%	0.0%	-0.1%	-0.3%	-0.5%	-0.1%
IPO Transaction Costs	-	-	-	-	-	-
%age of Revenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Legal and Professional Fees	912	1,060	471	402	227	432
%age of Revenue	-22.4%	-19.1%	-5.3%	-11.2%	-13.7%	-15.8%
Travel Expense	267	451	220	231	31	72
%age of Revenue	-6.6%	-8.1%	-2.5%	-6.4%	-1.9%	-2.6%
Administration Expense	398	738	433	486	612	900
%age of Revenue	-9.8%	-13.3%	-4.9%	-13.5%	-36.9%	-33.0%
Net Foreign Exchange Gains / Lossers	400	(1,354)	(1,817)	6,381	1,573	6,895
%age of Revenue	-9.8%	24.4%	20.6%	-177.2%	-94.8%	-252.5%
Other Expenses	17	135	220	204	147	250
%age of Revenue	-0.4%	-2.4%	-2.5%	-5.7%	-8.9%	-9.2%
Finance Costs	9	9	40	23	3	3
%age of Revenue	-0.2%	-0.2%	-0.5%	-0.6%	-0.2%	-0.1%
Total Expenses	3,169	3,097	1,238	9,468	4,321	9,914
%age of Revenue	-77.7%	-55.9%	-14.0%	-263.0%	-260.3%	-363.0%
Profit / (Loss) before income tax	(7,247)	(8,642)	(10,064)	(13,068)	(5,980)	(12,645)
%age of Revenue	177.7%	155.9%	114.0%	363.0%	360.3%	463.0%
Income Tax Expense / (Benefit)	-	(143)	(147)	-	-	-
Profit / (Loss) After Income Tax	(7,247)	(8,785)	(10,212)	(13,068)	(6,171)	(12,645)
%age of Revenue	177.7%	158.4%	115.7%	363.0%	371.8%	463.0%



### **Balance Sheet - Historical**

(All figures are in AUD thousands)	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
ASSETS						
Current Assets						
Cash & Cash Equivalents	3,617	23,364	15,341	7,142	6,281	6,429
GST Receivable	21	104	125	75	16	139
Income Tax Refund Due	-	-	68	0	-	-
Others	52	159	116	175	188	1,126
Assets of Disposal Groups classified as						
held for sale	298	-	-	-	317	4,586
Total Current Assets	3,988	23,627	15,651	7,392	6,802	12,279
Non Current Assets						
Investment in JV Accounted for using the						
Equity Method	37,456	33,233	30,124	25,075	28,595	30,379
Property, Plant and Equipment	5	9	148	26	24	6
Exploration and Evaluation	1,472	1,934	2,886	4,199	4,077	-
Total Non Current Assets	38,934	35,175	33,158	29,301	32,696	30,385
TOTAL ASSETS	42,922	58,802	48,808	36,693	39,498	42,664
LIABILITIES AND EQUITY						
·						
LIABILITIES						
LIABILITIES  Current Liabilities						
LIABILITIES  Current Liabilities  Trade and Other Payables	8,036	563	250	294	322	666
LIABILITIES  Current Liabilities  Trade and Other Payables Income Tax	-	142	-	-	-	
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits)	•				322 - 82	666 95
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with	- -	142 29	- 58	- 42	- 82	95
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits)	-	142	-	-	-	
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with	- -	142 29	- 58	- 42	- 82	95
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale	34	142 29 -	- 58 -	- 42 -	- 82 45	95 37
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale  Total Current Liabilities	34	142 29 -	- 58 -	- 42 -	- 82 45	95 37
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale Total Current Liabilities Non Current Liabilities	34 8,070	142 29 - <b>734</b>	- 58 - 309	- 42 - 336	- 82 45 <b>449</b>	95 37 <b>798</b>
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale Total Current Liabilities Long Term Borrowings	34 8,070	142 29 - <b>734</b>	- 58 - <b>309</b>	- 42 - 336	- 82 45 <b>449</b> -	95 37 <b>798</b>
LIABILITIES  Current Liabilities  Trade and Other Payables  Income Tax  Provisions (Employee Benefits)  Liabilities directly associated with Assets classified as held for sale  Total Current Liabilities  Non Current Liabilities  Long Term Borrowings  Payables	34 <b>8,070</b> - 4,590	142 29 - <b>734</b> -	- 58 - <b>309</b> - -	- 42 - 336	- 82 45 <b>449</b> - -	95 37 <b>798</b> - -
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale  Total Current Liabilities  Non Current Liabilities Long Term Borrowings Payables  Total Non Current Liabilities	34 8,070 - 4,590 4,590	142 29 - <b>734</b> - - -	- 58 - <b>309</b> - - -	- 42 - 336 - - -	- 82 45 <b>449</b> - - -	95 37 <b>798</b> - - -
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale  Total Current Liabilities  Non Current Liabilities Long Term Borrowings Payables  Total Non Current Liabilities  TOTAL LIABILITIES	34 8,070 - 4,590 4,590 12,660	142 29 - <b>734</b> - - -	- 58 - <b>309</b> - - -	- 42 - 336 - - -	- 82 45 <b>449</b> - - -	95 37 798 - - - - 798
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale Total Current Liabilities Non Current Liabilities Long Term Borrowings Payables Total Non Current Liabilities  Total Non Current Liabilities  TOTAL LIABILITIES	34 8,070 - 4,590 4,590	142 29 - 734 - - - 734	- 58 - 309 - - - - 309	- 42 - 336 - - - - 336	- 82 45 449 - - - - 449	95 37 <b>798</b> - - -
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale  Total Current Liabilities Non Current Liabilities Long Term Borrowings Payables  Total Non Current Liabilities  Total Non Current Liabilities  Contributed Equity	34 8,070 - 4,590 4,590 12,660	142 29 - 734 - - - 734 69,513	- 58 - 309 - - - - 309	- 42 - 336 - - - - 336	- 82 45 449 - - - - 449	95 37 <b>798</b> - - - <b>798</b> 89,392 11,226
Current Liabilities Trade and Other Payables Income Tax Provisions (Employee Benefits) Liabilities directly associated with Assets classified as held for sale  Total Current Liabilities  Non Current Liabilities Long Term Borrowings Payables  Total Non Current Liabilities  TOTAL LIABILITIES  EQUITY Contributed Equity Reserves	34 8,070 - 4,590 4,590 12,660 37,259 2,127	142 29 - 734 - - - 734 69,513 6,573	- 58 - 309 309 69,513 7,202	- 42 - 336 - - - - 336 69,613 7,964	- 82 45 449 449 77,403 8,977	95 37 <b>798</b> - - - - <b>798</b> 89,392
LIABILITIES  Current Liabilities  Trade and Other Payables  Income Tax  Provisions (Employee Benefits)  Liabilities directly associated with Assets classified as held for sale  Total Current Liabilities  Non Current Liabilities  Long Term Borrowings  Payables  Total Non Current Liabilities  TOTAL LIABILITIES  EQUITY  Contributed Equity  Reserves  Accumulated Profits/ (Losses)	34 8,070 - 4,590 4,590 12,660 37,259 2,127 (9,124)	142 29 - 734 - - - 734 69,513 6,573 (17,907)	- 58 - 309 309 69,513 7,202 (28,062)	- 42 - 336 - - - - 336 69,613 7,964 (41,034)	- 82 45 449 449 77,403 8,977 (47,148)	95 37 798 - - - - 798 89,392 11,226 (58,752)



## **Income Statement Summary - Projected (1/2)**

(All figures are in AUD thousands)	FY 2023P	FY 2024P	FY 2025P	FY 2026P	FY 2027P
Revenue	-	-	-	103,507	194,583
YoY Growth	-	-	-	-	88.0%
Total Expenses	3,440	3,557	3,594	12,006	20,701
%age of Revenue	0.0%	0.0%	0.0%	11.6%	10.6%
EBIT / Operating Income (Loss)	(3,440)	(3,557)	(3,594)	71,277	159,803
%age of Revenue	0.0%	0.0%	0.0%	88.4%	89.4%
Net Income / (Loss)	(3,440)	(3,557)	(3,594)	71,277	159,803
%age of Revenue	0.0%	0.0%	0.0%	68.9%	82.1%
EPS	(0.01)	(0.01)	(0.01)	0.18	0.41
YoYGrowth	- ·	-	-	-	124.2%

<sup>\*</sup>Note: The last year of production for the MSB asset according to our projections is FY 2048

# **Income Statement Summary - Projected (2/2)**

(All figures are in AUD thousands)	FY 2028P	FY 2029P	FY 2030P	FY 2031P	FY 2048*
Revenue	227,508	235,651	244,084	252,825	356,665
YoY Growth	16.9%	3.6%	3.6%	3.6%	-1.0%
Total Expenses	23,919	24,784	25,633	26,561	37,712
%age of Revenue	10.5%	10.5%	10.5%	10.5%	10.6%
EBIT / Operating Income (Loss)	187,029	193,716	200,673	207,854	293,066
%age of Revenue	89.5%	89.5%	89.5%	89.5%	89.4%
Net Income / (Loss)	187,029	193,716	200,673	207,854	293,066
%age of Revenue	82.2%	82.2%	82.2%	82.2%	82.2%
EPS	0.48	0.50	0.51	0.53	0.75
YoY Growth	17.0%	3.6%	3.6%	3.6%	1.2%

<sup>\*</sup>Note: The last year of production for the MSB asset according to our projections is FY 2048  $\,$ 



# **Balance Sheet - Projected (1/2)**

FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
8,435	4,899	1,312	58,446	192,437
175	175	175	175	175
8,610	5,074	1,487	58,621	192,612
76,314	294,500	468,840	484,366	511,607
3	2	1	0	0
-	-	-	-	-
76,317	294,501	468,841	484,366	511,608
84,926	299,575	470,327	542,988	704,220
565	584	591	1,973	3,403
565	584	591	1,973	3,403
565	584	591	1,973	3,403
135,327	353,513	527,853	527,853	527,853
11,226	11,226	11,226	11,226	11,226
(62,191)	(65,749)	(69,342)	1,935	161,738
-	-	-	-	-
84,361	298,990	469,737	541,014	700,817
84,926	299,575	470,327	542,988	704,220
	8,435 175 8,610 76,314 3 - 76,317 84,926 565 565 565 565 135,327 11,226 (62,191) - 84,361	8,435 4,899 175 175  8,610 5,074  76,314 294,500 3 2 76,317 294,501  84,926 299,575  565 584  565 584  565 584  135,327 353,513 11,226 11,226 (62,191) (65,749) 84,361 298,990	8,435       4,899       1,312         175       175       175         8,610       5,074       1,487         76,314       294,500       468,840         3       2       1         -       -       -         76,317       294,501       468,841         84,926       299,575       470,327         565       584       591         565       584       591         135,327       353,513       527,853         11,226       11,226       11,226         (62,191)       (65,749)       (69,342)         -       -       -         84,361       298,990       469,737	8,435       4,899       1,312       58,446         175       175       175       175         8,610       5,074       1,487       58,621         76,314       294,500       468,840       484,366         3       2       1       0         -       -       -       -         76,317       294,501       468,841       484,366         84,926       299,575       470,327       542,988         565       584       591       1,973         565       584       591       1,973         135,327       353,513       527,853       527,853         11,226       11,226       11,226       11,226         (62,191)       (65,749)       (69,342)       1,935         -       -       -       -         84,361       298,990       469,737       541,014

<sup>\*</sup>Note: The last year of production for the MSB asset according to our projections is FY 2048



# **Balance Sheet - Projected (2/2)**

(All figures are in AUD thousands)	FY 2028	FY 2029	FY 2030	FY 2031	FY 2048*
ASSETS					
Current Assets					
Cash & Cash Equivalents	352,694	522,987	704,274	899,638	8,602,629
Other	175	175	175	175	175
Total Current Assets	352,869	523,162	704,449	899,813	8,602,804
Non Current Assets					
Investment in JV Accounted for	538,908	586,534	720,347	824,307	924,200
Property, Plant and Equipment	0	0	0	0	0
Exploration and Evaluation Assets	-	-	-	-	-
Total Non Current Assets	538,909	586,534	720,347	824,307	924,200
TOTAL ASSETS	891,777	1,109,696	1,424,795	1,724,121	9,527,003
LIABILITIES AND EQUITY					
LIABILITIES					
Current Liabilities					
Trade and Other Payables	3,932	4,074	4,214	4,366	6,199
Total Current Liabilities	3,932	4,074	4,214	4,366	6,199
TOTAL LIABILITIES	3,932	4,074	4,214	4,366	6,199
EQUITY					
Contributed Equity	527,853	551,914	666,200	757,519	757,519
Reserves	11,226	11,226	11,226	11,226	11,226
Accumulated Profits/ (Losses)	348,767	542,483	743,156	951,010	8,752,059
Non-controlling Interest	-	-	-		-
TOTAL EQUITY	887,846	1,105,622	1,420,582	1,719,755	9,520,804
TOTAL LIABILITIES AND EQUITY	891,777	1,109,696	1,424,795	1,724,121	9,527,003

<sup>\*</sup>Note: The last year of production for the MSB asset according to our projections is FY 2048



## **Valuation**

Equity value of LPI stands between AUD 512.2 million and AUD 626.0 million

Equity value per share for LPI stands between AUD 0.79 and AUD 0.97

	Variance	Equity Value as on 10/4/2022 (in AUD thousands)	Price per Share (in AUD)
Downside Case	-10%	512,153	0.79
Base Case	0%	569,059	0.88
Upside Case	10%	625,965	0.97

<sup>\*</sup>Note: The equity value is calcualted based on 100% consolidation of MSB by LPI

# Important information on Arrowhead methodology

The principles of the valuation methodology employed by Arrowhead BID are variable to a certain extent, depending on the sub-sectors in which the research is conducted. But all Arrowhead valuation research possess an underlying set of common principles and a generally common quantitative process.

With Arrowhead commercial and technical due diligence, Arrowhead researches the fundamentals, assets and liabilities of a company, and builds estimates for revenue and expenditure over a coherently determined forecast period.

Elements of past performance such as price/earnings ratios, indicated as applicable, are mainly for reference. Still, elements of real-world past performance enter the valuation through their impact on the commercial and technical due diligence.

We have presented the discounted cash flow estimate approach for FCFE valuation. We have also presented Comparable Company Analysis. The fair value bracket is built on the basis of these two methods.

## **Arrowhead BID Fair Market Value Bracket**

The Arrowhead Fair Market Value is given as a bracket. This is based on quantitative key variable analyses such as key price analysis for revenue and cost drivers or analysis and discounts on revenue estimates for projects, especially relevant to projects estimated to provide revenue near the end of the chosen forecast period. Low and high estimates for key variables are produced as a valuation tool.

In principle, an investor comfortable with the high brackets of our key variable analysis will align with the high bracket in the Arrowhead Fair Value Bracket, and, likewise, in terms of low estimates. The investor will also note the company intangibles to analyze the strengths and weaknesses, and other essential company information. These intangibles serve as supplementary decision factors for adding or subtracting a premium in investor's own analysis.

The bracket should be taken as a tool by Arrowhead BID for the reader of this report and the reader should not solely rely on this information to make his decision on any particular security. The reader must also understand that while on the one hand global capital markets contain inefficiencies, especially in terms of information, on the other, corporations and their commercial and technical positions evolve rapidly. This present edition of the Arrowhead valuation is for a short to medium-term alignment analysis (one to twelve months).



# **Estimation of Equity Value**

Value of LPI's equity has been arrived at using a blend of two approaches - Comparable Company Analysis and DCF Valuation Approach. The results have been summarized in the table below.

LPI's major focus is on the Chile based MSB project, although it also has other early exploration stage assets in Western Australia. To value LPI, we have first calculated the value of MSB project using comparable company analysis and DCF valuation analysis. We added the book value of other exploration & evaluation stage assets to the weighted average equity value of LPI's MSB project to arrive at the equity value of LPI.

# **Valuation Summary - MSB Project**

(All figures in AUD thousands)

Valuation Approach	Equity Value as on 10/4/2022	Price per share (AUD)	Weight (%)
Comparable Company Analysis	556,795	0.86	50%
DCF Valuation	572,657	0.89	50%
Weighted Average Equity Value	564,726	0.87	100%

## **Equity Value - LPI**

(All figures in AUD thousands)

Business Segment	Equity Value as on 10/4/2022
Weighted Average Equity Value of MSB project	564,726
Book Value of Exploration & Evaluation Assets	4,333
Equity Value - LPI	569,059
Price per share	0.88

<sup>\*</sup>Note: The equity value is calculated based on the after-transaction value, i.e after 100% consolidation of MSB by LPI



Following is the detailed methodology of the two valuation approaches:

## 1. Comparable Company Analysis

Comparable Company Analysis method operates under the assumption that similar companies will have similar valuation multiples, such as EV/Proven and Probable Reserves. We have shortlisted companies similar in business with Lithium Power International based on parameters such as market size, regions of operations etc.

A list of available statistics for the companies was compiled, and the EV/Proven and Probable Reserves multiple was calculated for each of the comparable companies. Since most of the data was not normalized, we have left outliers in our calculations. The weighted average of the resulting multiple was then calculated and used as benchmark for valuing the LPI's MSB project.

The weights allocated to the comparable companies were based on the degree of their business match with the subject company.

(All figures in AUD thousands)

Relative Valuation based on:	Weight	Equity Value as on 10/4/2022	Implied Share Price (AUD)
EV / Proven & Probable Reserves	100%	556,795	0.86

#### **Business Match Score**

We have considered nine junior lithium mining companies in our Comparable Company Analysis. Most of these companies are Australian and have assets in Australia, Argentina, and Spain. A majority of these companies are in pre-production stage and have completed their DFS.

We have assigned a business match score to these companies based on the country in which their assets are located, the lifecycle stage of their assets (exploration / development / production), and the nature of their reserves (measured / indicated / inferred).



Stock Exchange	Ticker	Company Name	Business Match Score	EV/Proven & Probable Reserves
ASX	AGY	Argosy Minerals Limited	40%	2,809.4
ASX	GLN	Galan Lithium Limited	80%	118.0
ASX	СХО	Core Lithium Limited	40%	2,266.5
ASX	EUR	European Lithium Limited	70%	396.0
ASX	INF	Infinity Lithium Corporation	70%	371.7
ASX	AVZ	AVZ Minerals Limited	50%	520.9
ASX	LTR	Liontown Resources Limited	50%	1,458.5
ASX	LKE	Lake Resources	60%	1,911.2
Median				520.9
Mean without Outliers				686.8
Weighted Av				636.3
ASX	LPI	Lithium Power International		221.0

## Sensitivity Analysis

We have also analyzed the sensitivity of Company's equity value to the EV/Proven and Probable Reserves multiple, calculated in the Comparable Company Analysis method.

## Sensitivity based on EV/Proven & Probable Reserves Multiple

Target Multiple	Equity Value (AUD)	Price per share (AUD)
620.0x	551,074	0.85
630.0x	559,857	0.87
640.0x	568,640	0.88



# 2. Discounted Cash Flow (DCF) Approach for valuing LPI's MSB project

- Valuation Methodology: The Arrowhead fair valuation for Lithium Power International is based on the Discounted Cash Flow (DCF) analysis of the Company's investment in MSB, Chile joint venture project.
- **Time Horizon:** The time period chosen is based on the production reserves available for the asset under MSB joint venture. Period chosen for valuation is 26 years (2023 2048).
- **Terminal Value:** Terminal Value is considered to be zero as the production reserves are depleted by the end of FY 2042.

The following table calculates the cost of equity for LPI. The expected return on the market is assumed for the broader market. We have additionally assumed a company-specific risk to account for the risk involved in bringing the lithium mine into the production stage:

## **Cost of Equity**

Valuation	
Risk free rate (Rf)	3.94%
Beta	1.89
Equity Risk Premium	6.01%
Additional Company-specific Risk	2.50%
Cost of Equity	17.80%

The following tables summarize the Free Cash Flow to Equity computation for LPI, which is subsequently discounted at the Cost of Equity.

	2023	2024	2025	2026	2027
Tax Adjusted Net Income – LPI	(3,440)	(3,557)	(3,594)	71,277	159,803
Add: Depreciation and Amortization - LPI	3	2	1	0	0
Add: Amortization Expense - MSB	-	-	-	24,759	44,213
Less: Increase in Non-Cash Working Capital - LPI	5,442	20	6	1,383	1,429
Less: Capital Expenditure – LPI	91,870	436,372	348,680	-	-
Add: Increase in Debt - MSB	45,935	218,186	174,340	(30,267)	(32,688)
Free Cash Flow to Equity	(54,814)	(221,761)	(177,939)	64,387	169,898
Present Value	(46,532)	(159,812)	(108,858)	33,439	74,903



	2028	2029	2030	2031	2048
Tax Adjusted Net Income – LPI	187,029	193,716	200,673	207,854	293,066
Add: Depreciation and Amortization - LPI	0	0	0	0	0
Add: Amortization Expense - MSB	48,634	48,634	48,634	48,634	27,019
Less: Increase in Non-Cash Working Capital - LPI	529	142	140	152	(44)
Less: Capital Expenditure – LPI	-	48,121	228,572	182,639	-
Add: Increase in Debt - MSB	(35,303)	(14,067)	73,108	46,848	-
Free Cash Flow to Equity	199,831	180,020	93,705	120,544	320,130
Present Value	74,789	57,195	25,273	27,600	4,526

#### (All figures in AUD thousands)

Valuation		
Equity Value as on 6/30/2022		548,510
Equity Value as on 8/3/2022		572,657
Number of Shares Outstanding (in thousands)		647,302
Value per Share (AUD)		0.89

<sup>\*</sup>Note: The equity value is calcualted based on the after-transaction value, i.e after 100% consolidation of MSB by LPI. The total number of outstanding shares is also based on the total number of diluted outstanding shares after the transaction.



The equity value of the Company is sensitive to cost of equity. The following table captures the sensitivity of LPI's Value to these assumptions.

(All figures in AUD thousands)

Cost of Equity	Equity Value
13%	1,148,038
14%	993,452
15%	859,888
16%	744,143
17%	643,552
18%	555,888
19%	479,284
20%	412,174
21%	353,235
22%	301,350



# **Analyst Certifications**

We, Karan Mehta and Aditya Ahluwalia, certify that all of the views expressed in this research report accurately reflect our personal views about the subject security and the subject company.

# **Important disclosures**

Arrowhead Business and Investment Decisions. LLC received fees in 2021 and will receive fees in 2022 from Lithium Power International Ltd. for researching and drafting this report and for a series of other services to Lithium Power International Ltd., including distribution of this report, investor relations and networkina services. Neither Arrowhead BID nor any of its principals or employees own any long or short positions in Lithium Power International Ltd. Arrowhead BID's principals have a mandate for investment banking services from Lithium Power International Ltd. and expect to receive compensation for investment banking activities from Lithium Power International Ltd. in 2022.

Aside from certain reports published on a periodic basis, the large majority of reports are published by Arrowhead BID at irregular intervals as appropriate in the analyst's judgment.

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Investors must make their own investment decisions based upon their specific investment

objectives and financial situation utilizing their own financial advisors as they deem necessary. Investors are advised to gather and consult multiple information sources before making investment decisions. Recipients of this report are strongly advised to read the information on Arrowhead Methodology section of this report to understand if and how the Arrowhead Due Diligence and Arrowhead Fair Value Bracket integrate alongside the rest of their stream of information and within their decision taking process.

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# **Appendix**

# **Glossary**

LPI	Lithium Power International
JV	Joint Venture
MSB	Minera Salar Blanco S.A.
DFS	Definitive Feasibility Study
MoU	Memorandum of Understanding
Mitsui	Mitsui & Co., Ltd.
DLE	Direct Lithium Extraction
GEA Messo	GEA Messo GmbH
CLL	Centenario Lithium Limited
LPIH	Lithium Power International Holdings (Argentina) Pty Ltd
СР	Competent Person
QP	Qualified Person
LCE	Lithium Carbonate Equivalent
EPC	Engineering, Procurement and Construction
IRR	Internal Rate of Return
NPV	Net Present Value
EIA	Environmental Impact Assessment
CEOL	Special Contract for the Operation of Lithium
PPM	Parts Per Million
LCT	Lithium-Caesium-Tantalum
EDC	Export Development Canada
JBIC	Japan Bank for International Cooperation
EFA	Export Finance Australia
Vertex	Vertex Lithium Corporation



## **Notes and References**

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