LITHIUMPOWER
INTERNATIONAL LTD

Independent company research and estimated fair value

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Table of Contents

Introduction

Lithium Power International ("LPI") is the majority owner of the Minera Salar Blanco S.A. JV ("MSB") with its main asset, the Maricunga lithium brine project, located in Chile, 3750 metres above sea level and 160 kilometres from the city of Copiapo near the Argentinian border. The JV has three shareholders, LPI (51%), Minera Salar Blanco, also known as Minera, (31%) and Bearing Lithium (18%). **The vast majority of LPI's valuation is its stake in the MSB, the central focus of this report, however, the company also has highly prospective exploration tenements in Western Australia (currently drilling at Tabba Tabba) and Argentina.**

Since joining the MSB in 2016, LPI has injected $31m in staged payments, facilitating the accelerated development of the project using Tier 1 consultants to definitive feasibility stage by January 2019. These factors make the JV the most advanced undeveloped lithium project in Chile.

Figure 1: Maricunga project location in the Lithium Triangle in Chile (LPI Company Reports)

MSB assets consist of 2,563 hectares of mining concessions, the new code tenements (Litio 1-6) represent 1,438 hectares and the remaining old code tenements 1,113 hectares (Figure 2). CODELCO owns 2,700 hectares, all of which are old code land. The other tenement holders in the Salar, including SQM, own new code land meaning that to exploit those concessions a CEOL is required.

In March 2018 CODELCO, a state-owned company was granted the exclusive rights to exploit all the new code tenements constituted under the 1983 Chilean mining law in the Salar de Maricunga by the outgoing Bachelet government.

CODELCO has a long and successful history in copper mining and limited to no interest in lithium mining. This reality is why, during July 2019, MSB

signed a non-binding MOU with CODELCO to form a new company ("Newco") to own and develop their tenements jointly. The MOU is non-binding and is subject to mutual due diligence and, more importantly, both parties await MSB securing approval for its environmental impact assessment (EIA). The EIA approval is expected in Q4 2019: approximately a year after its submission. There were no disclosures regarding the potential split of ownership for Newco.

Notwithstanding, we believe that the addition of CODELCO's tenements would potentially add 10ktpa of potential lithium carbonate production to the existing 20ktpa project in time. As the capex associated with such a Stage 2 will be lower than the existing project and the mine life similar albeit with a later start date, the expected increase in the enlarged NPV would be ~$500m. **Apportioning ownership in Newco according to NPV contribution, existing MSB shareholders would receive 66.67% and CODELCO 33.33%**.

On a look-through basis, LPI controls MSB and will control Newco post a JV with CODELCO before capex spending. To raise the equity portion (~US$282m) of the required capex (US$563.4m), Newco will likely sell a stake to an offtake/strategic partner. Chile has previously stated its ambitions to host downstream lithium-ion battery cell production and, if these ambitions remain, then it is conceivable CODELCO could retain its share of MSB's carbonate production.

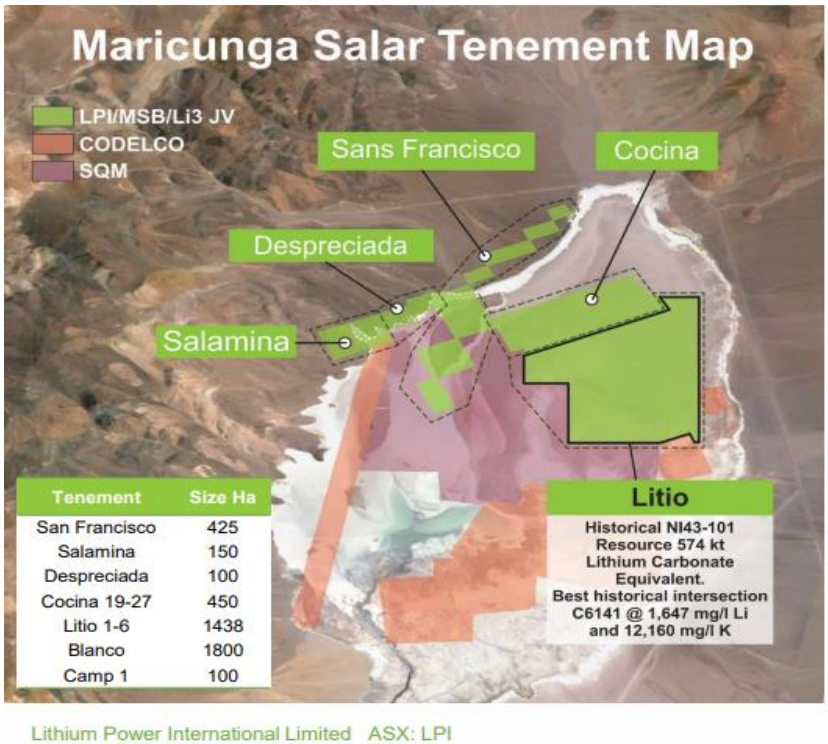

Figure 2: Salar de Maricunga map (LPI Company Report)

Chile is a highly ranked mining destination; having placed sixth out of 122 locations for both investment attractiveness and best practices in the 2018 Fraser Institute survey.

Figure 3: Investment Attractiveness Index

Figure 3: Mining Investment Attractiveness Index Source: Fraser Institute

Albemarle and SQM have been operating in Chile since the 1980s and 1990s and have secured leases from CORFO until 2041 and 2030 respectively. While neither company owns their tenements and pays sliding scale royalty rates (made through lease payments) linked to their export sale price, MSB owns all of its tenements and will not be liable for royalties on its old code land other than standard mining royalties. On its new code land, MSB expects to pay higher royalty rates of ~7%.

Argentina	Catamarca*	61.11	42.86	44.44	40.91	75.00	43/83	78/91	85/104	98/109	21/122
	Chubut*	66.67	33.33	31.25	46.15	59.38	26/83	85/91	97/104	90/109	62/122
	Jujuy*	50.00	61.11	16.67	54.17	61.54	62/83	42/91	103/104	72/109	56/122
	La Rioja*	50.00	41.67	31.25	33.33	45.00	63/83	80/91	98/104	106/109	99/122
	Mendoza*	50.00	20.00	36.36	40.48	44.12	64/83	89/91	95/104	100/109	102/122
	Neuquen*	30.00	50.00	10.00	58.33	54.55	82/83	66/91	104/104	60/109	74/122
	Salta*	45.00	56.25	60.00	52.94	73.53	70/83	54/91	59/104	76/109	28/122
	San Juan	50.00	60.71	57.14	55.88	75.00	65/83	43/91	69/104	68/109	22/122
	Santa Cruz	60.71	60.71	50.00	43.75	64.71	46/83	44/91	78/104	93/109	46/122
Latin America and the Caribbean Basin	Bolivia	50.00	29.17	53.13	50.00	55.00	60/83	87/91	73/104	78/109	73/122
	Brazil	54.76	54.76	60.87	64.71	75.00	56/83	59/91	54/104	44/109	23/122
	Chile	82.43	82.14	63.64	77.36	80.36	9/83	7/91	49/104	11/109	6/122
	Colombia	65.00	63.64	68.75	68.75	63.89	34/83	38/91	36/104	29/109	47/122
	Dominican Republic*	33.33	44.44	30.00	44.44	50.00	80/83	74/91	100/104	92/109	88/122
	Ecuador	65.22	58.70	61.11	46.67	60.00	33/83	47/91	53/104	89/109	58/122
	French Guiana*	60.00	45.45	58.33	42.86	50.00	47/83	72/91	63/104	95/109	89/122
	Guatemala*	38.89	25.00	50.00	38.89	31.82	77/83	88/91	79/104	103/109	115/122
	Guyana*	66.67	42.86	66.67	45.00	63.33	27/83	79/91	40/104	91/109	50/122
	Mexico	75.64	61.63	65.12	67.46	77.97	17/83	41/91	43/104	34/109	12/122
	Nicaragua	25.00	35.00	45.83	61.54	59.09	83/83	84/91	84/104	53/109	64/122
	Panama	33.33	50.00	43.75	53.33	56.25	81/83	67/91	87/104	74/109	68/122
	Peru	82.81	77.78	76.09	70.90	80.36	8/83	14/91	17/104	25/109	7/122
	Suriname	65.00	57.14	**	**	50.00	36/83	53/91	**	**	90/122
	Venezuela	46.15	60.71	46.43	53.13	52.17	68/83	45/91	83/104	75/109	82/122

Figure 4: Fraser Institute Best Practices Mineral Potential Index

OEM battery warranties will apply globally, including their China EV sales. **Based on the historical and current reality that the supply and qualification of high specification chemicals are not growing as quickly as total lithium supply, we are of the opinion that only a limited number of producers will continue to achieve OEM qualification status and that newcomers will struggle technically. MSB and, in future, Newco must find experienced staff or partner with an experienced operator.**

OEMs are increasingly assessing the carbon footprint of suppliers as well as their proximity to cathode/battery plants. They will also consider the potential risks of Chinese export bans, counterparty credit/financial stability and whether a Chinese supplier will renege on a long-term contract if Chinese spot prices rally and trade at a substantial premium. Even if there is no reneging, it is likely delivery will be made in the absolute minimum tonnage per the contract when the material is needed most. **These factors increase the appeal of Chile-based chemical producers such as MSB**.

The following sections provide an analysis and discussion of both advantages, as well as risks and issues, in this regard.

Key Advantages

1. **Location**: The MSB project is located 160kms from Copiapo in Chile. Chile has been ranked 6th in the Fraser Institute investment attractiveness survey.

2. **Strategic value**: As a brine-related project, MSB is effectively an integrated producer of battery-grade carbonate. There are a limited number of chemical producers outside of China. Chile has the potential to supply the America's cathode market as those industries expand production into South and Central America.

3. **Potential Newco partner**: CODELCO is a state-owned entity formed in 1976 and is the largest copper company in the world with annual sales of US$14.3bn in 2018. CODELCO's financial strength and A+ long-term foreign currency rating along with its strong global relationships, will prove invaluable to the project.

4. **Infrastructure**: There is sufficient access to fresh water and the necessary power for efficient operation. Further, there is an international highway running adjacent to the property.

5. **Low operating costs:** The key to successful commodity and chemical companies is the ability to operate and make a margin throughout the entire cycle. MSB will be in the first quartile re operating costs.

6. **High lithium grades and large resource**: After the Salar de Atacama, MSB's lithium grades are the highest globally. While impurities are important, the grade is critical to the success of a brine project. Also, the project has a resource of 2MT and the potential to grow to ~4MT post the completion of an additional exploration program once the operation starts.

Key Risks and Issues

1. **EIA approval for the project (20,000tpa):** The final hurdle for MSB is receiving the EIA approval. The CODELCO MOU is non-binding until the EIA is secured. Further, the initial

EIA approval will cover 20,000tpa, at a later stage, Newco can apply to expand or extend production capacity based on the original EIA approval.

2. **Risks of a government change in laws and royalty rates relating to lithium:** The Chilean government continues to review its policy on lithium production in the country and could potentially introduce a new royalty structure. The change in royalties will only affect the new code land (Litio 1-6) and not the old code tenements; these will be determined on a case by case basis through the CEOL for each project.

3. **Project valuation when introducing a strategic partner:** While the MOU with CODELCO will be instrumental in opening numerous channels of debt funding to Newco, the remaining equity financing attributable to the new JV will be substantial. Based on a 50/50 debt-equity split, Newco will require an ~US$280m equity contribution. As this contribution will likely arise from the sale of a minority stake in the project to a strategic partner, the deemed project valuation at the time of the sale will be critical. Should market conditions remain unfavourable, the Newco partners, including LPI, may be required to make an equity contribution to maintain majority ownership of the project.

4. **Lower long-term lithium price assumptions and longer qualification periods:** The financial models below assume a **long-term battery-grade carbonate price (US) of $12,500/t.** A further assumption is that MSB will take two years or more to qualify its product with OEMs.

Fair Value Estimate

For the preparation of this report, we have both reviewed MSB's definitive feasibility study ("DFS") for the Maricunga lithium project in detail and updated reserve and resource estimates as well as management discussions. In addition, a conservative valuation estimate (A$13.5m) has been applied to the exploration portfolio in Western Australia and Argentina given the early-stage nature of these assets. LPI's current exploration program includes 4,000m of drilling at Tabba Tabba, the results of the drilling program have yet to be released. We believe there is substantial upside potential in the exploration portfolio and will update our estimated valuation on completion of development milestones.

We have constructed a financial model using more conservative assumptions regarding operating costs and long-term lithium prices and conclude that the MSB project could potentially earn a **steady state EBITDA of US$200m** following the successful construction and ramp of the initial 20,000ktpa carbonate plant and additional stage 2 10,000ktpa plant. **The company has not outlined plans for a stage 2, this is an RK Equity assumption and assumes the successful conclusion of a JV with CODELCO and that Newco has the necessary infrastructure and resource size to achieve increased production volumes and will receive the necessary EIA permits to expand**.

Based on current market conditions, certain conservative debt, prepayment and equity issuance assumptions are included. **Assuming MSB receives approval of its environmental impact assessment and concludes a binding MOU with CODELCO**, one can arrive at an **estimated short-term fair value for LPI of A$0.63-A$0.87 and a longer-term valuation, using an 8x EV/EBITDA multiple, of A$1.44-A$1.70 per share. Should the long-term lithium price exceed our expectations as per Roskill's estimates using ~$17,000/t, then the estimated fair value increases to $2.56 a share.**

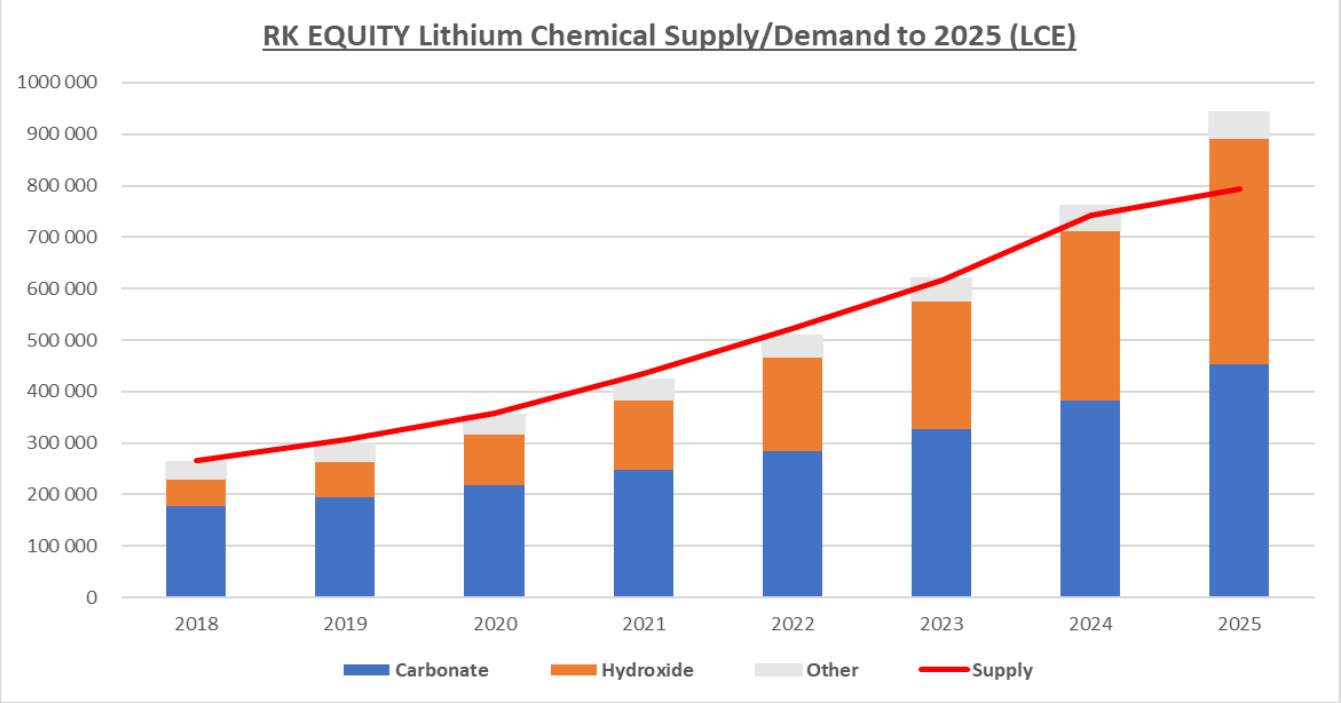

Figure 5: RK Equity lithium chemical supply/demand forecast to 2025 (LCE)

The Case for Lithium: Chemical Supply and Demand Fundamentals

With future annual growth estimated by all the "Big 4" lithium producers at 18%-21% p.a. to 2025, the expected annual demand will be between 900KT and 1MT with a potential upward bias as all forms of transport convert to lithium-ion batteries. Future growth is driven by **absolute EV sales** and the **increase in average battery size** in EVs.

Figure 5, which depicts **RK Equity's** supply/demand forecast graph, predicts a **step change in demand from 2023/2024**. This ties in with Bloomberg NEF's forecast of average battery pack prices falling below US $100/kWh in **2024 (US $94/kWh).** US $100/kWh is considered the inflexion point at which EV's will not only be cheaper from a running cost perspective but also from that of sale prices. Lower battery prices are possible by production volume growth at battery "megafactories". Bloomberg NEF research estimates the "learning curve" at 18% for every doubling of capacity. Following the announced implementation of EU CO2 emission standards and penalties starting 2021, OEMs have announced the release of a significant number of EV models. In Europe, by 2021, there are 214 EV models planned versus 60 existing models in 2018.

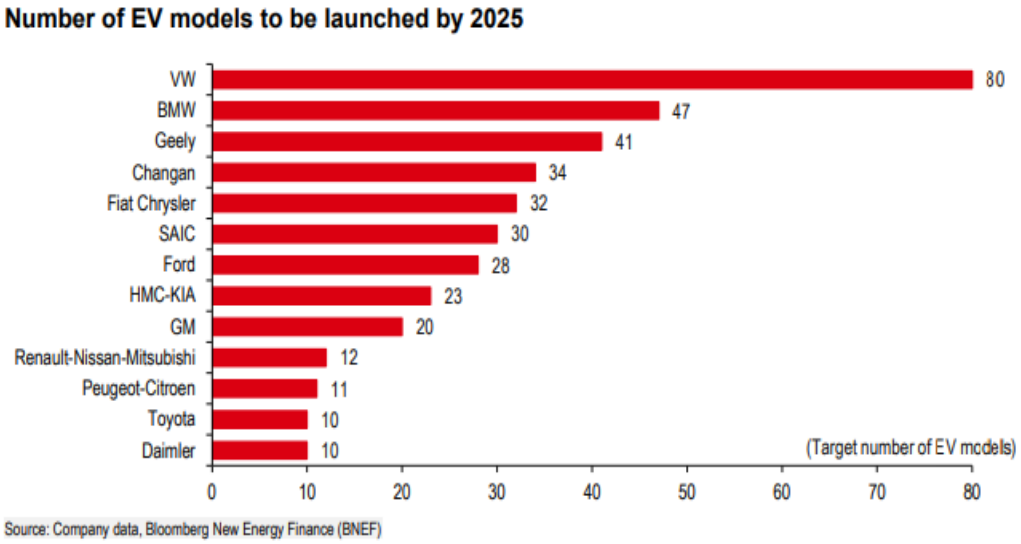

Figure 6: Target EV model releases from major OEMs (BNEF)

The scale of the penalties payable by EU OEMs is greater than the cost of switching to EV production. If 2021 penalties were in place today, it would cost VW over US$10bn annually.

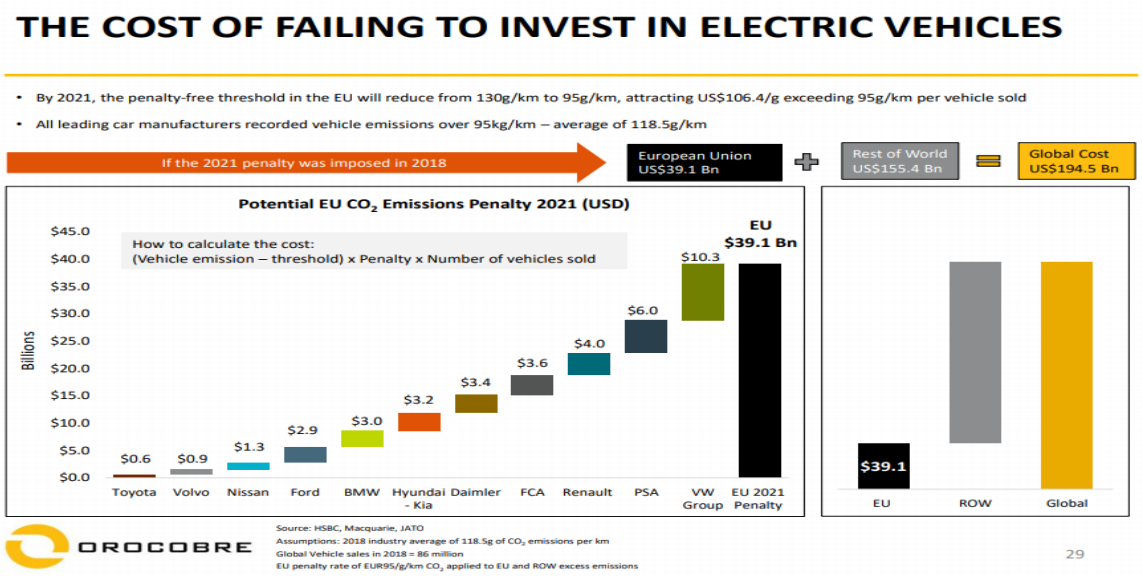

Figure 7: Potential EU OEM penalties based on 2018 CO2 emissions (Orocobre Reports)

Given the strategic importance of auto manufacturing in Europe, there has been a coordinated drive by both governments (subsidies for EV purchases and battery plant finance, EU CO2 emission penalties) and OEMs. It is estimated that battery cell capacity in Europe will grow ten times in the next five years to ~200 GWh. VW alone has stated that it will need 150 GWh of supply in Europe and a further 150 GWh in the rest of the world. **As the major EV markets, China and Europe, develop their battery supply chains to ensure future security, the result will be a limited remaining supply of Tier 1 batteries available for US OEMs (excluding Tesla)**. A substantially increased penetration in EV sales in the United States auto market and a commensurate increase in investments announcement by SK Innovation (a battery plant in Georgia) and further cathode / battery cell and pack producers would enhance the value of MSB, given its location and planned chemical output of battery-grade carbonate from a sustainable brine source located in nearby South America. Alternatively, Chile has been a leader in adopting EV buses, renewable energy and aspires to produce downstream products. MSB is well placed to participate in this process.

Lithium chemicals supply projects

Project Name	Project Type	Ore supply Classification	Chemical plant Classification	Chemical Type	Volume growth Target
SQM Atacama	Brine		Brownfield	Carb / Hydrox	100K MT +
ALB Le Negra	Brine		Brownfield	Carbonate	40K MT
ALB Xinyu	Hard Rock	Brownfield	Brownfield	Hydroxide	20K MT
ALB Kemerton	Hard Rock	Brownfield	Greenfield	Hydroxide	80K - 100K MT
Wodgina JV	Hard Rock	Greenfield	Greenfield	Hydroxide	100K MT
Tianqi	Hard Rock	Brownfield	Greenfield	Hydroxide	48K MT
KDR / SQM	Hard Rock	Greenfield	Greenfield	Hydroxide	45K MT
Livent	Brine		Brownfield	Hydroxide	40K MT
LAC / Ganfeng	Brine		Greenfield	Carbonate	25K MT
Orocobre	Brine		Brown / Green	Carb / Hydrox	25K MT
				TOTAL	523-543K MT

Greenfield	303K MT	Hydroxide
Greenfield	25K MT	Carbonate

Figure 8: Planned new lithium projects (Author, Company Reports)

Recently ALB announced an indefinite “postponement” of 125 KT of annual hydroxide production (175 KT including Mineral Resources 50% share in Wodgina). Given that ALB’s estimated capex is $24,000/t at Kemerton and that the Wodgina project is in a more remote location of Western Australia, there is a high likelihood that the capex for Wodgina would have matched or exceeded Kemerton. Based on the estimated all-in cost of ALB’s original JV stake, the analysis suggested that a $14,000/t hydroxide price

was needed for ALB to achieve an IRR of 17%. Increasing capex per ton at Wodgina to $24,000/t, up from $16,000/t previously and assuming a lower long-term hydroxide price meant ALB would likely only achieve a single-digit IRR. As many other proposed lithium projects globally have similar capex/opex assumptions, we can expect delays from these greenfield projects. **The only brownfield project expansions that make economic sense in a lower lithium price environment (<$10k/t) are SQM (Atacama) and ALB/Tianqi in China using Greenbushes SC6**. These projects alone will not be able to meet fast growing battery-grade demand from the energy storage sector. **To adequately incentivise chemical production (ex-China) that meets OEM qualification standards, lithium prices will need to ensure that IRR's of 18%-20%+, using realistic capex/opex assumptions, are achievable**.

RK Equity Long-term Lithium Price Deck

Lithium Grade	Long-Term Price (US$)	Note
Non battery grade Li2CO3 exw China	$8,500/t	
Battery grade Li2CO3 exw China	$10,500/t	Conversion cost plus margin (~$2,000/t)
Battery grade LiOH exw China	$11,000/t	Above $11,000/t excess margins (>15%-20%) for converters will incentivize additional production to come online
Battery grade Li2CO3 US/EU/JP/SK	$12,500/t	+$2,000/t premium for a) geographic diversity and security of supply (ex-China) b) sustainability (lower carbon footprint) c) OEM qualified (higher spec)
Battery grade LiOH US/EU/JP/SK	$13,000/t	As above plus a $500/t premium over Li2CO3 due to increased demand for LiOH and reduced supply (ALB etc.)

Source: RK equity estimates

The recent rise in Chinese chemical conversion capacity post the 2016/2017 lithium price rally suggests that **additional capacity will come online if operating margins of greater than 15%-20%+ are achievable**. Especially if SC6 feedstock is readily available from Australia. As SC6 producers are currently throttling back production (with further expansion plans available) and Chinese conversion capacity is only utilising 60%-65% of SC6 supply, we see no SC6 shortage for years to come.

Supply is SC6.0 produced and shipped

Company	Project	2018	2019	2020	2021	2022	2023	2024	2025
Tianqi / ALB	Greenbushes	616 000	760 000	760 000	1 000 000	1 200 000	1 400 000	1 500 000	1 500 000
Min Res / Albemarle	Wodgina	0	75 000	150 000	250 000	350 000	500 000	500 000	500 000
SQM / Kidman	Mt Holland	0	0	0	0	100 000	275 000	350 000	372 000
Galaxy	Mt Cattlin	165 000	160 000	200 000	250 000	260 000	280 000	280 000	280 000
Mineral Res / Ganfeng	Mt Marion	384 000	350 000	350 000	350 000	350 000	350 000	350 000	400 000
Pilbara Minerals	Pilgangoora	28 800	225 000	250 000	300 000	400 000	500 000	650 000	750 000
Altura	Pilgangoora	48 000	180 000	220 000	220 000	260 000	260 000	280 000	280 000
A40	Bald Hill	77 000	130 000	130 000	150 000	180 000	180 000	250 000	280 000
Nemaska	Quebec	0	0	0	50 000	100 000	150 000	150 000	150 000
Bikita	Bikita	50 000	50 000	50 000	50 000	50 000	50 000	50 000	50 000
AMG	Mibra	20 000	75 000	75 000	75 000	75 000	100 000	120 000	120 000
Other China	Various	85 000	85 000	85 000	85 000	85 000	85 000	85 000	100 000
Hard rock (New)	Various	0	0	0	60 000	100 000	150 000	200 000	300 000
	TOTAL	1 473 800	2 090 000	2 270 000	2 840 000	3 510 000	4 280 000	4 765 000	5 082 000
	% Change		41.81%	8.61%	25.11%	23.59%	21.94%	11.33%	6.65%
	Capacity **	190 168	269 677	292 903	366 452	452 903	552 258	614 839	655 742
	Estimate	127 800	170 300	210 500	269 500	338 000	413 500	504 550	543 796
	Utilization %	**67.20%**	**63.15%**	**71.87%**	**73.54%**	**74.63%**	**74.87%**	**82.06%**	**82.93%**

** based on a 7.75 SC6.0 conversion factor per ton of chemical

Source: RK Equity estimates

Considering the difficulties of achieving OEM qualification and the anticipated tightening of battery-grade/quality specifications, we have applied a **$2,000/t premium when compared to China spot prices**. As OEM qualification typically takes at least 12-24 months depending on the supplier, OEM battery-qualified lithium demand is "lagged" by supply, a fact which then further underpins the motivation for a premium price.

Figure 9: Qualification process and timeline (Albemarle Company Presentation)

Mineral Reserve Estimate and Exploration Upside

Table 12: Lithium Reserve Estimate (adjusted for 58% lithium process recovery efficiency)

Lithium Brine Mining Reserve Estimate - dated January 15, 2019						
Concession area	Category	Year	Brine Vol (Mm3)	Ave Li conc (mg/l)	Li metal (tonnes)	LCE (tonnes)
Old code	Proved	1-7	21	1,051	22,000	115,000
	Probable	1-18	42	1,068	45,000	241,000
Litio 1-6	Proved	7-14	14	1,184	17,000	88,000
	Probable	14-23	48	1,170	56,000	298,000
Total		1-23	125	1,117	139,000	742,000
Lithium Brine Available for Production (accounting for 58% lithium pond and process recovery efficiency) - dated January 15, 2019						
Concession area	Category	Year	Brine Vol (Mm3)	Ave Li conc (mg/l)	Li metal (tonnes)	LCE (tonnes)
Old code	Proved	1-7	21	1,051	13,000	67,000
	Probable	1-18	42	1,068	26,000	140,000
Litio 1-6	Proved	7-14	14	1,184	10,000	51,000
	Probable	14-23	48	1,170	32,000	173,000
Total		1-23	125	1,117	81,000	430,000

Figure 10: Lithium reserve estimate (LPI Company Presentation)

Mineral reserve: The Maricunga project contains both old and new code tenements. Based on a 58% lithium process recovery estimate and a maximum depth of 200m, the total project mining reserve LCE tonnage is 430,000, taking into account brine pumping limitations, sufficient to support 20 years of production at 20,000tpa.

Exploration upside: A deep borehole (S-19) was drilled to a depth of 360m and encountered a continuation of the lower brine aquifer with lithium concentrations above 900mg/l Li. The exploration target of the zone between 200m and 400m is 1Mt – 2.5Mt LCE. This substantial exploration upside could comfortably provide the resource/mining reserve needed to expand production beyond 20,000tpa and 20 years.

Project Infrastructure and Layout

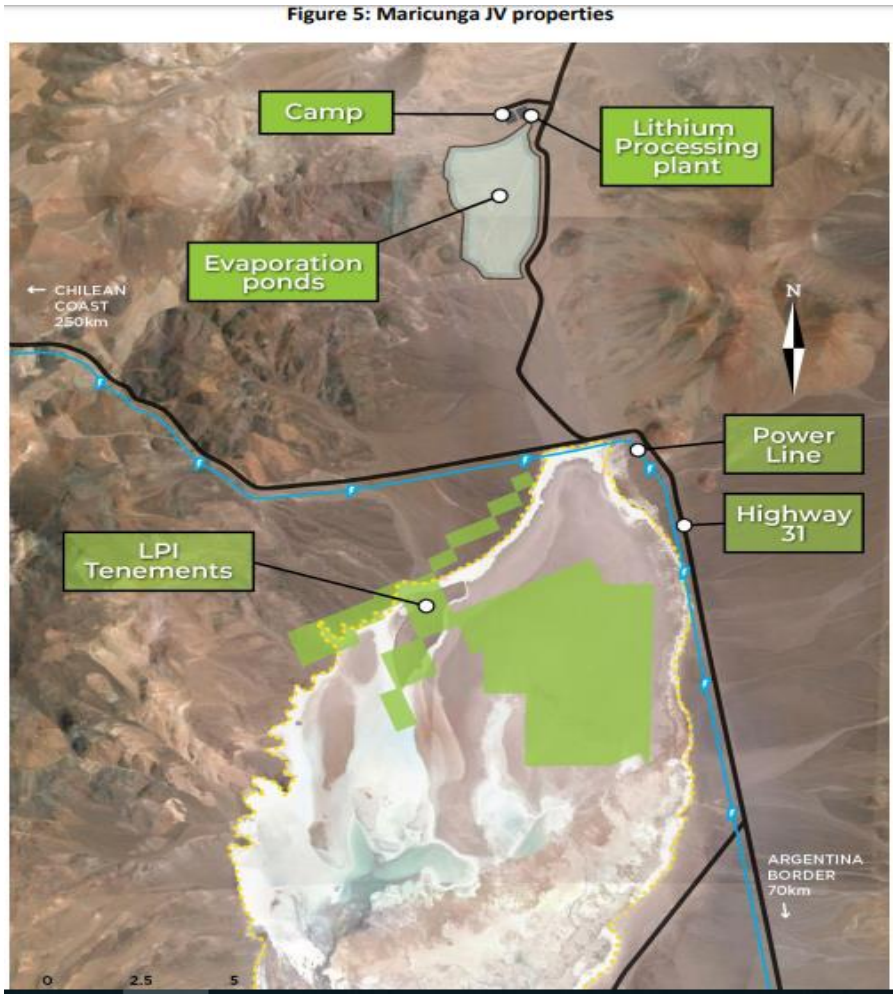

Figure 11: MSB project layout (LPI Company Reports)

Project infrastructure: Worley Parsons conducted the design and costing for the project infrastructure. Site infrastructure consists of:

- Power and water supplies
- Project accommodation camp and offices, laboratory, parking, workshops, general warehousing, weighing station and local access roads
- Reagent preparation building, storage and preparation of soda ash
- Fuel plant and station
- Storage and distribution of sulfuric acid and lime plant
- Compressors room, boiler room and water conditioning plant
- Lithium carbonate plant

Power supply: Initially, the project will require 14 MW of power. The Chilean Electric Coordinator has given MSB authority to use 7.5 MW by connecting to the 23kV transmission line that passes the project from the La Coipa mine (see above). This existing line was originally built with 66 kV capacity by Kinross for future mining but is only operating at 23 kV. MSB will look to change the transformers at the substation to increase the capacity of the existing line.

Water supply: MSB has negotiated access to a water well (CAN-6) located on the Eastern side of the salar. This well will provide the necessary volume of water for lithium carbonate production.

Transportation: As the DFS now excludes the production of potash, the haulage requirements of the Maricunga project now entail the delivery of sodium carbonate (soda ash) from Antofagasta to the site and haulage of lithium carbonate to port at Angamos. As seen in Figure 9, there are heavy haulage public roads (International Highway 31) located near the site to and from the coast.

Project Flow Sheet

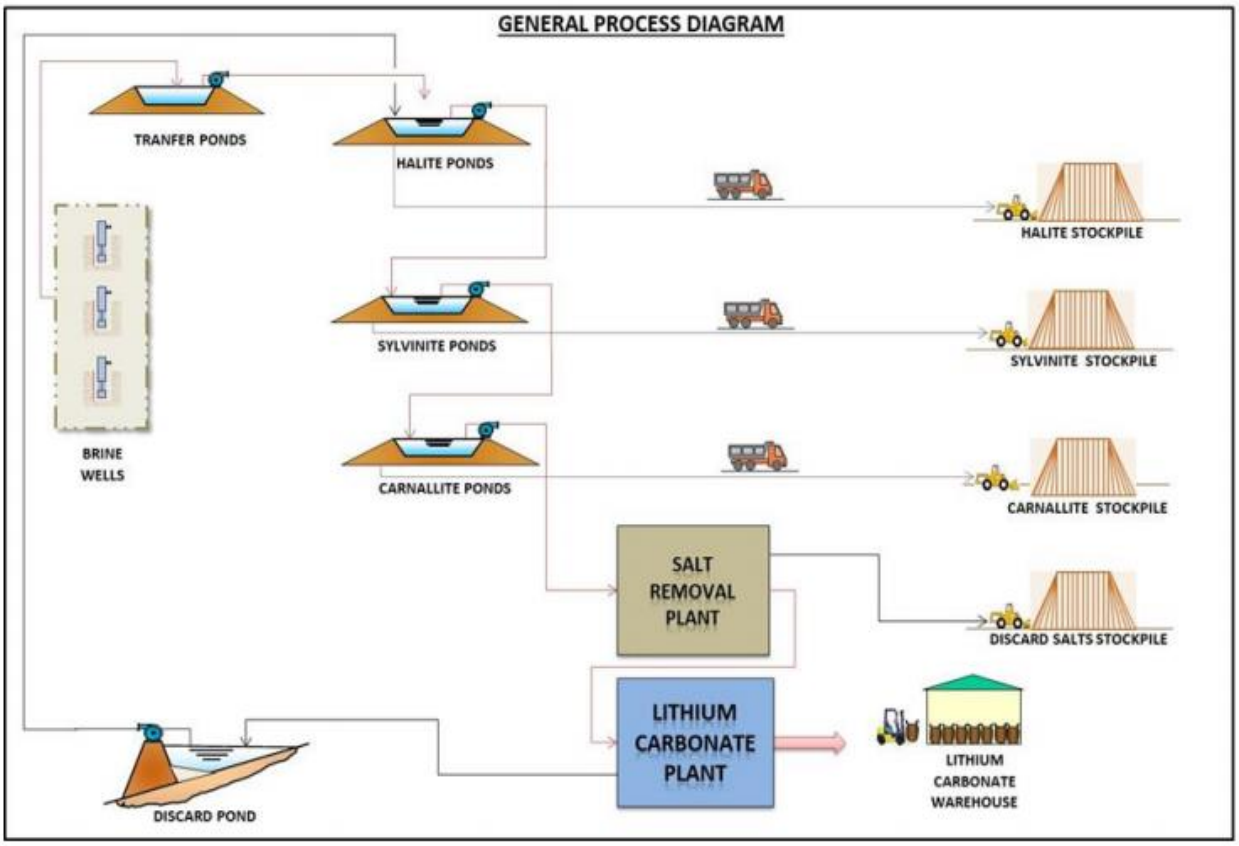

Figure 12: Project flow sheet (LPI Company Reports)

Wells and pipelines: Based on flow rates from the pump tests and the results of the groundwater model, a minimum of 12 pumps are required at the project. There will be a total of 44 wells over the project life with no more than 15 wells pumping at any one time; the wells will be between 11m and 208m deep with mostly 200m wells. Deep wells are there ensure there is limited pumping from the upper halite aquifer (high grade) to minimise the impact on the water in the gravels surrounding the Salar. A maximum pumping rate of 300l/s occurs during the first two years of the project to fill the evaporation ponds. Post this initial start-up phase; the maximum pumping rate will vary between 55 and 234l/s depending on seasonal effects and peak evaporation periods. There is a reserve model that separately tracks brine that originates from outside the property boundary. The model predicted 4% of lithium produced might originate outside the project property.

Evaporation pond design: As per Figure 9, the evaporation ponds are located 5 kilometres north of the Salar where the flatter natural slopes and the gravel/sand can be easily shaped for cut and fill pond design. The ponds are to be lined with HDPE membrane for waterproofing and 2m deep. Brine transfer

flows by gravity, and if not possible, a pumping station will need to be installed. All ponds will have access roads for monitoring and maintenance activity.

Salt removal plant: Initially the brine that comes from the ponds is fed to the salt removal plant (US$66.4m capex, $486/t opex), which through the processes of evaporation and crystallization, allows for the concentration of the lithium contained in the brine and at the same time enables the elimination of excess calcium and other impurities from the brine in the form of tachyhydrite and calcium chloride. This stage allows the feeding of more concentrated brine to the following stages of processing and generates water recovery.

Process plant: MSB has worked with experience suppliers including Veolia and GEA with the latter providing the final more detailed pilot plant test work using Maricunga brine. Concentrated brine from the salt removal plant transfers to the lithium carbonate plant, which utilising purification processes, solvent extraction, carbonation and drying, removes the remaining contaminants present in the brine, such as boron, magnesium and calcium. In this manner, the final product, lithium carbonate, is obtained. **MSB is anticipating a 2-year ramp-up period and long-term plans production of 18,000tpa of battery-grade and 2,000tpa of industrial-grade carbonate (our model is forecasting a 3-year ramp-up period and ~80% effective capacity)**.

Opex, Capex and Timeline Analysis

Table 5: Summary of operating costs per tonne (excluding KCl)

Description - Operation Costs	US$ / Tonne Li2CO3 Battery Grade	US$ / Tonne Li2CO3 Technical Grade	Total 000 US$ pa
DIRECT COSTS			
Chemical Reactives and Reagents	1,040	1,040	20,799
Salt Removal	486	486	9,727
Energy	1,028	1,028	20,552
- Electrical	*370*	*370*	*7,398*
- Thermal	*658*	*658*	*13,154*
Manpower	458	458	9,160
Catering & Camp Services	105	105	2,100
Maintenance	295	295	5,899
Transport	237	237	4,740
DIRECT COSTS SUBTOTAL	**3,649**	**3,649**	**72,977**
INDIRECT COSTS			
General & Administration - LOCAL	123	123	2,702
INDIRECT COSTS SUBTOTAL	**123**	**123**	**2,702**
TOTAL PRODUCTION COSTS	**3,772**	**3,772**	**75,679**

Figure 13: MSB DFS opex estimates (LPI Company Reports)

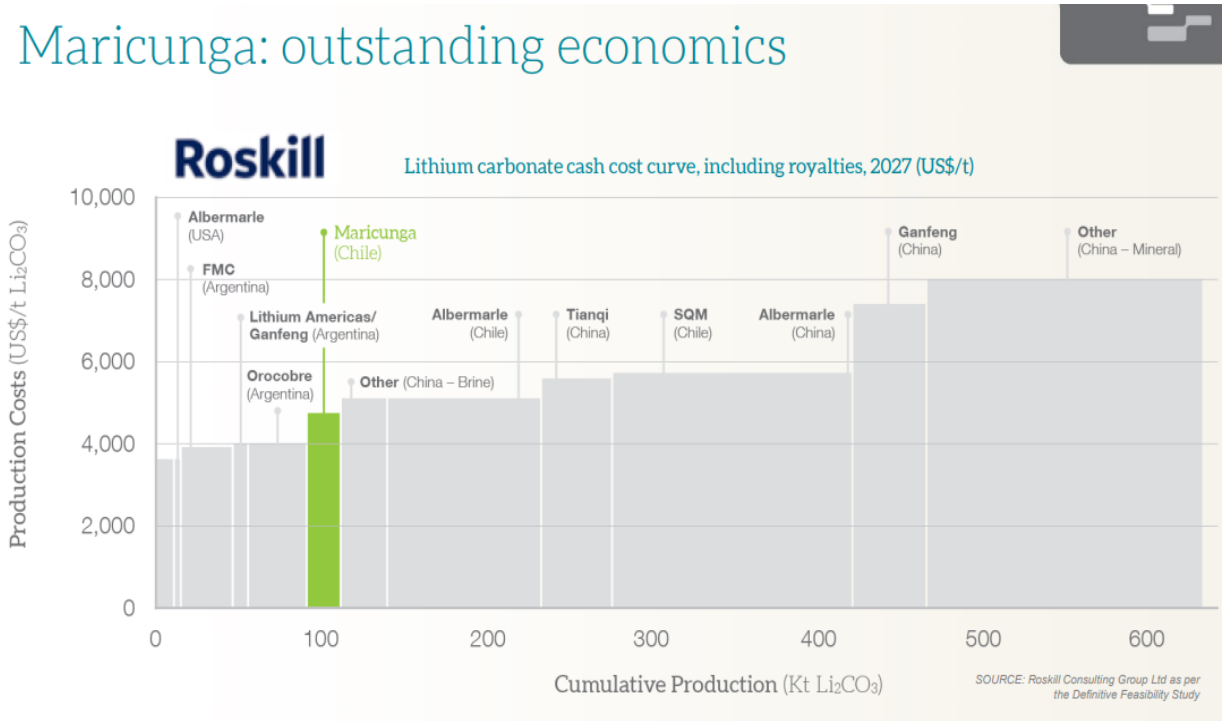

Figure 14: Bar Graph illustrating the 2027 Li2CO3 cost curve (LPI Company Reports)

While we view lithium as a specialty chemical and not a pure commodity, where a project sits on the cost curve is important. The Maricunga project, depending on the future price of lithium carbonate

and hence the progressive royalty payments payable by SQM and Albemarle, will sit in either the 1st or 2nd quartile. Demand growth rates for lithium chemicals is, at 20%+ p.a., unprecedented. However, the road to an established and balanced market will be volatile. It's key for projects to be able to withstand periods of oversupply to ensure they benefit from high prices during undersupply. **Tier 1 battery demand from western OEMs will be substantial by 2023, and beyond, cathode producers are currently engaging with all credible projects to meet their future precursor requirements. Low opex projects located outside China with a robust DFS in a safe jurisdiction are in short supply**.

Figure 15: Table showing the estimated development timeline (LPI Company Reports)

Based on management interaction and company releases, the anticipated construction start date for the project is Q3 2020. We envisage a slight delay to the end of Q4 2019-Q1 2020 for the EIA approval and hence confirmation of a binding MOU with CODELCO. Project financing will likely follow in Q2 2020, reflecting a delay of approximately six months but should provide Newco with additional time to secure debt, a strong offtake arrangement and/or Newco stake sale. The lithium market and pricing are anticipated to be firmer in 2020 and, owing to this; a delay could be opportunistic for Newco regarding negotiations.

Project Capital Cost Analysis

Table 6: Summary of capital cost items (all inclusive)

Area	Description	US$'M
	Direct Costs	
1000	Brine Extraction Wells	39.4
2000	Evaporation Ponds	115.3
3000	Potassium Chloride Plant (Cost not included)	
4000	Carnalite Plant (Cost not included)	
5000	Removal of Salts	66.4
6000	Lithium Carbonate Plant	71.6
8000	General Services	103.3
9000	Infrastructure	60
	Total Direct Cost	456
	Total Indirect Cost (10% of direct costs)	44.8
	Total Direct & Indirect Costs	500.9
	Contingencies (14% of direct costs)	62.6
	TOTAL	563.4

Figure 16: Project capital costs (LPI Company Reports)

In November 2017, MSB released a PEA estimated capex of $527.31m. Major changes from the PEA to the current DFS are as follows:

- KCl plant capex of $23.4m removed
- Salt removal plant capex increased by $36.4m
- General services increased by $73.4m
- Total estimated capex on a like for like basis has increased $59.45m

MSB has budgeted $71.6m for the carbonate plant (20,000tpa). While each brine project is unique, the cost of a carbonate plant is somewhat standard. As such, we are somewhat sceptical of competing projects estimating ~$50m for an equivalent capacity as MSB.

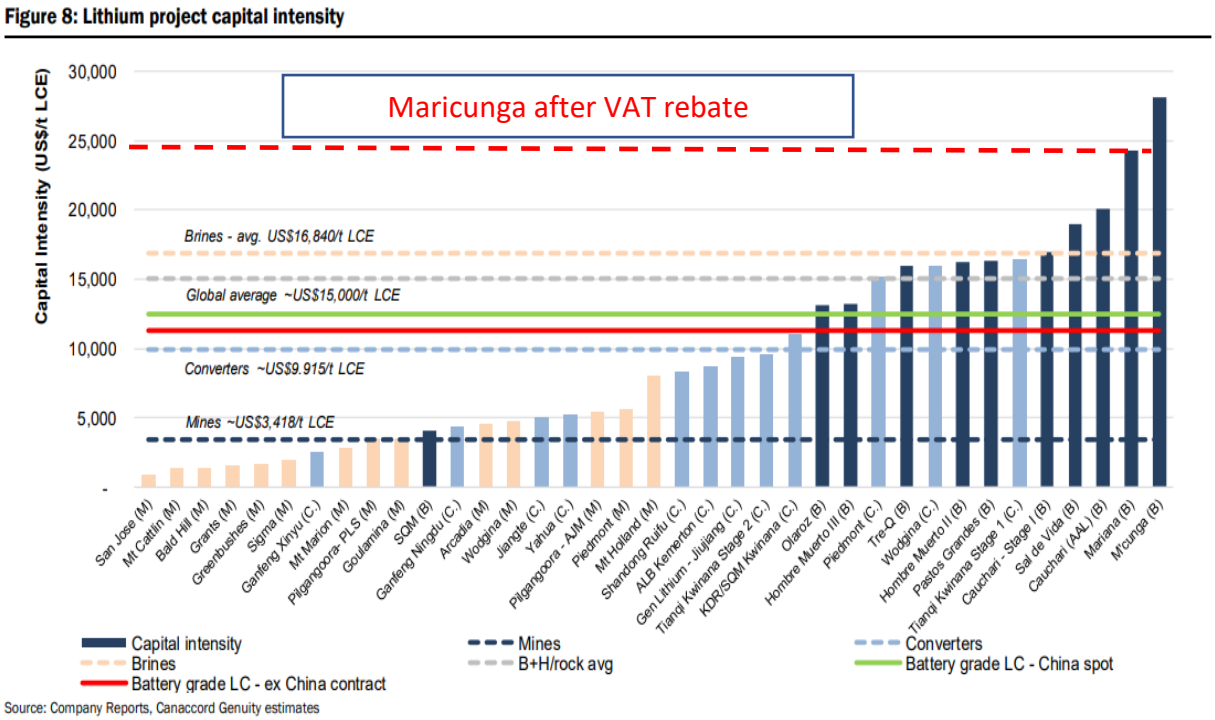

Figure 17: Industry capex costs (Canaccord Genuity)

Brine capital cost per ton peer comparison

According to Canaccord Genuity's table above, which includes principally PEA and PFS level cost estimates and MSB's DFS for Maricunga, the Maricunga project has the highest expected capex of its brine peers. On an ex-VAT basis, the project matches the Mariana project at around ~$24,700/t to within a +-15% accuracy. Given the location of the Maricunga project and ready access to critical infrastructure, namely power and water, we believe that the DFS level capex estimates are realistic. There are several brine (and hard rock) peers, included in the above chart, that have only completed PFS/PEA level capex estimates to within +-35% accuracy. **We are of the opinion that only DFS level capex comparisons are valid – the depth and detail of work required to complete a DFS is substantial and incomparable to a PFS.**

LPI Management and Major Shareholders

Strong leadership and support

Board of Directors	
Mr David R Hannon	*Chairman*
Mr Cristobal Garcia-Huidobro R	*CEO and Managing Director*
Mr Richard A Crookes	*Executive Director (Corp Finance)*
Mr Russell C Barwick	*Non-Executive Director*
Mr Ricky P Fertig	*Non-Executive Director*
Mr Martin Borda M	*Non-Executive Director*
Mr Andrew G Phillips	*CFO and Company Secretary*

Substantial Shareholders (May 27, 2019)	
Founders & Directors	22.3%
HSBC Custody Nominees (Australia) Limited	10.5%
Citicorp Nominees Pty Ltd	7.7%
Brispot Nominees Pty Ltd	4.8%
Yarandi Investments Pty Ltd	3.6%
G Harvey Nominees Pty Ltd	2.5%
UBS Nominees Pty Ltd	2.4%
Morgan Stanley Australia Securities Pty Ltd	2.3%
J P Morgan Nominees Pty Ltd	1.9%

Research Coverage	
Canaccord Genuity	*Reg Spencer*
RK Equity	*Howard Klein & Rodney Hooper*
Hallgarten & Company	*Christopher Ecclestone*

Capital Structure		
ASX Code		LPI
Shares on Issue		262.5M
Cash at bank:	– LPI Circa	AU$16.1m
	– Chilean JV Circa	US$2.1m
Listed Options exercise price – 55 cps[1]		34.6m (AU$19m)
Unlisted Options exercise price – 25 cps[2] (average)		46.3m (AU$11.58m)

[1] LPIOA expiry July 6th, 2019
[2] Majority of Unlisted options expiry June 23rd, 2021 (majority held by founders)

Figure 18: Corporate snapshot (LPI Company Reports)

Management collectively owns 22.3% as well as additional 46.3m options averaging a 25cps strike price. Those options expire in June 2021. Following the implementation of those options, management will own 33.95% of the company. It should be noted that LPI's MSB partner, Minera, has two representatives on the LPI board of directors in the positions of CEO and non-executive director. Martin Borda Mingo, the controlling shareholder of Minera, is a well-known and regarded businessman in Chile. Along with the other LPI board members, he has and will continue to guide the project through to production in a short space of time. Outside parties interested in the project are effectively negotiating with 82% of MSB directly when they deal with the intertwined and united Minera/LPI board.

When the unlisted options are exercised, LPI will raise a further ~A$11.6m through the settlement of the strike price premium. New additions to management have been given longer-dated 60cps options and are therefore incentivised along with shareholders to see price appreciation. In December 2017 LPI raised A$35.6m through the issue of 64.8m shares at A$0.55 per share. This well-timed capital raise has funded LPI through to completion of the DFS and funds the current exploration campaign in WA.

Estimated Fair Value Analysis

Short-term (H2 2019 – 1H 2020)
Post the EIA approval and binding CODELCO agreement

UPSIDE STAKE SALE SCENARIO

Item	%	US$m
Capex	100.0%	563.4
Debt	50.0%	281.7
VAT rebate		-70.00
Net debt		211.7
Term debt		120-150
Prepayment / OT		61.7-91.7
Equity	50.0%	281.7
Codelco	33.3%	93.90
MSB	66.7%	187.80
NPV (incl Codelco)		1 500
P/NPV (MSB sale)		0.50
MSB valuation		750
MSB sale %		26.67%
MSB capital raise		200
MSB project % post		40.00%
LPI MSB stake (post)		20.40%
LPI valuation (US$)		153.00
NO OPTION DILUTION		A$m
LPI valuation		224.91
Cash on hand		20.00
Exploration portfolio		13.51
TOTAL		258.42
Shares in issue (mn)		262.50
Fair value per share	A$	0.98
FULLY DILUTED		A$m
LPI valuation		224.91
Cash on hand		20.00
Options exercised		11.58
Exploration portfolio		13.51
TOTAL		270.00
Shares in issue (mn)		308.80
Fair value per share	A$	0.87

BASE STAKE SALE SCENARIO

Item	%	US$m
Capex	100.0%	563.4
Debt	50.0%	281.7
VAT rebate		-70.00
Net debt		211.7
Term debt		120-150
Prepayment / OT		61.7-91.7
Equity	50.0%	281.7
Codelco	33.3%	93.90
MSB	66.7%	187.80
NPV (incl Codelco)		1 500
P/NPV (MSB sale)		0.40
MSB valuation		600
MSB sale %		33.33%
MSB capital raise		200
MSB project % post		33.33%
LPI MSB stake (post)		17.00%
LPI valuation (US$)		102.00
NO OPTION DILUTION		A$m
LPI valuation		149.94
Cash on hand		20.00
Exploration portfolio		13.51
TOTAL		183.45
Shares in issue (mn)		262.50
Fair value per share	A$	0.70
FULLY DILUTED		A$m
LPI valuation		149.94
Cash on hand		20.00
Options exercised		11.58
Exploration portfolio		13.51
TOTAL		195.03
Shares in issue (mn)		308.80
Fair value per share	A$	0.63

Figure 19: Estimated LPI valuation post stake sale (Author)

We believe the fully diluted valuation is the appropriate estimated fair value – based on a potential Newco deal valuation with a strategic partner of **P/NPV 0.4-0.5x (US$600-US$750m)**, LPI is valued at between **A$0.63 – A$0.87 per share**. We assume that the strategic buyer of a minority equity stake (and provider of a prepayment facility) in Newco's MSB project would also receive the **marketing rights** for its stake and that of all the non CODELCO shareholders. As a reference point to our valuation, Blair Franklin, as of March 2019, gave a fairness opinion for Minera Exar (Ganfeng/LAC's Cauchari Olaroz 25,000tpa brine project) of between **US$600m-US$725m**.

What does a P/NPV ratio of 0.4x-0.5x translate into with respect to capital intensity per ton?

UPSIDE STAKE SALE SCENARIO		Note
P/NPV (MSB sale)	0.50	
MSB valuation	750	
MSB sale	26.67%	
MSB sale value (US$m)	200	
MSB debt (ex VAT) Phase 1	211.7	
Debt (stake sale) Phase 1	56.5	
Stake sale EV (US$m)	268.2	
Steady state production (ktpa)	30 000	20ktpa phase 1 and 10ktpa exp phase 2
Look through stake capacity	8 000	Long-term phase 2
Stake sale cost per ton (all-in)	33 519	Excl phase 2 capex
Stake share of phase 2 capex (US$m)	53.3	$20k/t capex phase 2 - total $200m
Stake sale EV incl Phase 2 (US$m)	321.5	
Stake sale cost/t (incl phase 2)	40 186	Incl Phase 2 capex

BASE STAKE SALE SCENARIO		Note
P/NPV (MSB sale)	0.40	
MSB valuation	600.00	
MSB sale	26.67%	
MSB sale value (US$m)	160	
MSB debt (ex VAT) Phase 1	211.7	
Debt (stake sale) Phase 1	56.5	
Stake sale EV (US$m)	216.5	
Steady state production (ktpa)	30 000	20ktpa phase 1 and 10ktpa exp phase 2
Look through stake capacity	8 000	Long-term phase 2
Stake sale cost per ton (all-in)	27 057	Excl phase 2 capex
Stake share of phase 2 capex (US$m)	53.3	$20k/t capex phase 2 - total $200m
Stake sale EV incl Phase 2 (US$m)	269.8	
Stake sale cost/t (incl phase 2)	33 723	Incl Phase 2 capex

Figure 20: Estimated capital intensity per ton (Author, Company Releases)

The **base case scenario** of a sale multiple of **P/NPV of 0.4x** values the MSB project at US$600m. Allocating the strategic buyers share of net debt to the equity purchase price and the buyers share of future capex to reach long-term steady-state production (30ktpa), **the implied all-in cost per ton of installed capacity is US$33,723**.

The **upside case scenario** of a sale multiple of **P/NPV of 0.5x** valuing the MSB project at US$750m. Allocating the strategic buyers share of net debt to the equity purchase price and the buyers share of future capex to reach long-term steady-state production (30ktpa), the implied all-in cost per ton of installed capacity is **US$40,186**.

How do these all-in costs per ton valuations compare with deals executed in the lithium market?

Albemarle – Wodgina: Albemarle paid US1.15bn for 50% of the project, and there was an estimated $850m capex share (50%) to reach 100ktpa steady-state production. Based on an all-in investment estimate of US$2bn, Albemarle was looking at $40,000 per ton of installed capacity. In reality, Albemarle's other WA project, Kemerton, has an updated estimated capex of $24,000/t. If Wodgina, located in a more remote part of WA, were to have the same capex cost per ton, then Albemarle's **final all-in cost would be US$47,000/t**. With the fall in lithium prices, Albemarle has decided to postpone construction of the Wodgina hydroxide project. It should be noted that Albemarle received 100% marketing rights for Wodgina's SC6 and hydroxide output as part of the transaction price.

Wesfarmers-Kidman: Wesfarmers made an A$776m (US$528m) offer for Kidman. Kidman owns 50% of the 45,400/t hydroxide project at Mt Holland. The estimated capex of the project has increased recently, and the total all-in cost for Wesfarmers is now **~US$1bn for 22,700tpa of installed capacity**. It is pointing towards an effective **final all-in cost of US$44,000/t**. Wesfarmers will only have the marketing rights for its 50% share of production.

Ganfeng-Bacanora: Bacanora's capex is US$420m for 17,500tpa (carbonate) of installed capacity or $24,000/t. Ganfeng seized on the opportunity to buy into the Sonora clay project (Mexico) after Bacanora struggled to raise funding last year post Nemaska's C$1.1bn raise for Whabouchi. Final pricing or deal confirmation is yet to be determined; however, the likely all-in cost for Ganfeng to acquire a 50% stake in the project will be approximately **$30,000-$32,000/t** for stage 1.

Ganfeng-LAC: The look-through valuation for this transaction is complicated by the change in ownership and input costs from SQM to Ganfeng for 37.5% project ownership and then a further 12.5% stake purchase by Ganfeng for US$160m. If we use the Blair Franklin fair valuation of US$600m-US$725m and a capex of US$500m for 25,000/t, then the phase 1 all-in cost (fair value) is $44000-$49,000/t. Assuming a **phase 2** increase of 15,000tpa to 40,000tpa at a capex cost of $17,000/t then the all-in cost (fair value) falls to **$33,875 - $37,000/t**.

Company	Valuation method	All-in cost per ton	Locat	Type
Albemarle-Wodgina	Transaction	$47,000	Australia	Hard Rock
Westfarmers-Kidman	Transaction	$44,000	Australia	Hard Rock
Ganfeng-Bacanora	Est Transaction	$30,000-$32,000	Mexico	Clay
Ganfeng-LAC	Fairness opinion	$33,875-$37,000	Argentina	Brine
Minera Salar Blanco	P/NPV 0.4-0.5x	$33,723-$40,186	Chile	Brine

Whilst MSB has a low projected operating cost (US$3,721/t) and will earn a similar operating margin to the peer group above and with a solid Newco JV partner in CODELCO should secure low-cost debt, we believe at this point in the cycle it will be challenging to attract an all-in cost valuation of above $35,000-40,000/t.

Steady State EBITDA long-term valuation

Year	2023	2024	2025	2026	2027	2028	2029
Capacity ktpa	20,000	20,000	20,000	30,000	30,000	30,000	30,000
Effective cap ktpa	5,000	12,000	16,000	21,000	25,000	25,000	25,000
Avg lithium price/t	12,000	12,000	12,500	12,500	12,500	12,500	12,500
Cost of prod incl royalties	4,500	4,500	4,500	4,500	4,500	4,500	4,500
EBITDA US$m	37.5	90.0	128.0	168.0	200.0	200.0	200.0
EV/EBITDA **8x**	300.0	720.0	1,024.0	1344.0	1600.0	1600.0	1600.0
Less (debt)	-211.7	-180.0	-120.0	0.0	0.0	0.0	0.0
MSB equity valuation (US$m)	88.3	540.0	904.0	1344.0	1600.0	1600.0	1600.0
LPI stake P/NPV **0.4x** (17.0%)	15.0	91.8	153.7	228.5	272.0	272.0	272.0
LPI P/NPV 0.4x A$ per share	0.22	0.58	0.88	1.23	1.44	1.44	1.44
LPI stake P/NPV **0.5x** (20.4%)	18.0	110.2	184.4	274.2	326.4	326.4	326.4
LPI P/NPV 0.5x A$ per share	0.23	0.67	1.02	1.45	1.70	1.70	1.70

What if the long-term price (2027 onwards) of lithium is higher than our $12,500/t estimate?

The below table highlights the estimated fair value of LPI given varying lithium prices.

Lithium price/t	**$13,000**	**$14,000**	**$15,000**	**$16,000**	**$17,000**
LPI stake P/NPV **0.4x** (17.0%)	1.52	1.68	1.85	2.01	2.17
LPI stake P/NPV **0.5x** (20.4%)	1.80	1.99	2.18	2.37	2.56

Conclusion

The MSB project continues to progress towards a final investment decision with only an outstanding EIA approval required. While CODELCO needs to execute due diligence before converting the existing MOU with the MSB partners to a binding version, this should be a formality once the Maricunga EIA is approved. We believe the respective NPVs will determine the Newco partnership shareholding including CODELCO.

As CODELCO's inclusion results in the addition of a further 10ktpa capacity after 3+ years of production (RK Equity assumption) at a lower capex and provides an extended mine life, we see the original NPV of ~$1bn increasing to ~$1,5bn. As such the Newco will likely be split 66.67%/33,33% in favour of the existing MSB members. The introduction of CODELCO opens all potential debt avenues for Newco, given its credit rating. The key steps for Newco shareholders post the JV is the **timing and terms of the offtake and partnership agreements with a 3rd party**. We have estimated potential outcomes to these negotiations based on recent market transactions – the **actual terms will depend on the buyers view regarding the importance of diversity of supply, Chilean country risk, demand for carbonate feedstock and the technical skills/ability of the MSB JV to execute successfully and the commercial terms of the marketing/offtake agreement**.

Based on Chile's global ranking regarding investment attractiveness and best practices and considering Albemarle has indefinitely postponed the construction of the Wodgina hydroxide plant, Kemerton stages 3-5 and the Atacama yield enhancement strategy, chemical plants (and supply) outside China have become scarcer and more valuable. Capital cost overruns at Kwinana and Kemerton are likely to put a dampener on other planned WA projects; SQM, with no hard rock experience, can grow production in the Atacama at $5,000/t capex versus Mt. Holland at $20,000/t+. We believe a delay in the construction of Mt Holland with SQM's new partner Wesfarmers, is probable. Cathode/battery cell manufacturers have purposefully tried to diversify geographic supply risk and limit their exposure to any one particular company. This task is becoming increasingly harder as WA and other projects get shelved.

We do not subscribe to the view that lithium chemicals are a commodity. However, we do recognise the importance of being a low- cost producer in a specialty chemical market that will have future

volatility. MSB, depending on prices and royalty rates, could be in the first quartile for production costs.

MSB finalises several **milestones in H2 2019 and early 2020.** These follow below.

- EIA approval for the MSB Maricunga project in Q4 2019 / Q1 2020
- International EPC bidding process
- Finalise a binding MOU and definitive agreement with CODELCO post EIA approval and a due diligence
- Strategic partner and off-take agreement
- WA exploration program (all assets) and drill results for Tabba Tabba
- Project financing for Newco once formed post the CODELCO agreement

The definitive feasibility study is accurate to within +-15%; we consider MSB's capex estimate of $563.4m credible. Based on our long-term carbonate price estimates (substantially below Roskill's) we still see substantial upside in the LPI share price going forward.

Our short-term estimated fair value for LPI is A$0.63-A$0.87 post the EIA approval and finalisation of a binding MOU with CODELCO. Our longer-term fair value is derived from the longer-term EBITDA potential of Newco. Assuming an EV/EBITDA multiple of 8x and a steady-state EBITDA of US$200m, we estimate the fair value of LPI to be between A$1.44 and A$1.70 per share. If the long-term carbonate price is $17,000/t, closer to Roskill's estimate, then the fair value rises to between A$2.17 and A$2.56 a share.

Given that the current availability of high specification chemicals is limited to select suppliers and geographic locations, buyers haven't stressed sustainability to date. In time OEMs (VW and Mercedes have publicly stated this) will strive to be carbon neutral. The entire lithium-ion battery supply chain will face scrutiny, and we believe there is a high probability that either CO2 incentives or penalties will be levied across the entire supply chain from mine to EV showroom floor. Looking at the possible battery supply chain alternatives outside China, MSB is well placed to benefit greatly from future incentive and penalty schemes.

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