EDISON

Lithium Power International

Initiation of coverage

Riding the lithium wave

Metals and mining

Lithium Power International (LPI) owns 51.6% of the advanced lithium brine project in the Maricunga Salar in Chile. Based on the 2022 updated feasibility study, the project has relatively attractive economics supported by the strong lithium market fundamentals and low opex. Lithium demand is expected to grow exponentially, driven by e-mobility, with prices likely to remain at elevated levels that will encourage new supply. We value LPI at A$1.02/share based on the 15.2ktpa carbonate operation and additional lithium resources that are currently outside of the project's scope.

Year end	Revenue (A$m)	PBT* (A$m)	EPS* (c)	DPS (c)	P/E (x)	Yield (%)
06/20	0.0	(12.7)	(4.94)	0.0	N/A	N/A
06/21	0.0	(6.0)	(2.16)	0.0	N/A	N/A
06/22e	0.0	(7.6)	(1.91)	0.0	N/A	N/A
06/23e	0.0	(5.0)	(1.38)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Maricunga: Permitted lithium project with scalability

Since the release of a 20ktpa DFS in 2019, Maricunga's scope has been revised in 2022 to focus on a smaller scale 15ktpa carbonate project underpinned by the mining concessions, which do not require a special operating licence (CEOL). This significantly reduces permitting and execution risks. The project's brine resources have also been upgraded at depth to support the similar 20-year operating life. The smaller-scale 2022 DFS confirmed an attractive opex of US$3,864/t, and while the project's capital intensity is relatively high, as it requires an additional processing step, it is expected to produce a high-quality battery grade product, which should be sought after in the structurally tight lithium market.

Lithium: In short supply

The lithium market is undergoing significant transformation on the back of explosive growth in e-mobility and energy storage. Given the shortage of development-stage lithium projects, the market is likely to remain in structural deficit at least over the next two to three years. This should support higher prices to incentivise new supply. After a period of market weakness in 2020–21 due to COVID-19, spot carbonate prices delivered to China have recently exceeded the US$50,000/t level. We conservatively model a contract carbonate price of US$23,000/t in 2022–24, falling to our long-term price assumption of US$17,000/t in 2027.

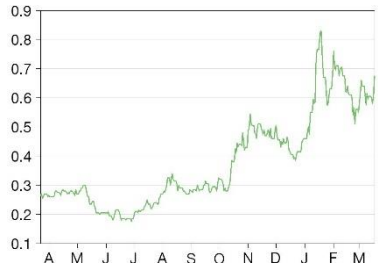
Valuation: 15ktpa project yields healthy upside

Our valuation of LPI is based on the 15.2ktpa project, and key operating and cost assumptions from the 2022 DFS. We use a discounted cash flow to equity approach that assumes equity dilution. At a 10% discount rate, our NPV yields a valuation of A$0.85/share for LPI. To this we add a value for the remaining lithium resources, which we estimate at A$0.18/share. A 10% increase in our long-term carbonate price moves our base case NPV up by c 20%. We see the key risks as an uncertain political situation and general opposition to lithium projects in Chile.

21 March 2022

Price	**A$0.68**
Market cap	**A$237m**
	A$1.38/US$
Net cash (A$m) at December 2021	15.4
Shares in issue	348.8m
Free float	100%
Code	LPI
Primary exchange	ASX
Secondary exchange	N/A

Share price performance



%	1m	3m	12m
Abs	13.1	70.4	142.1
Rel (local)	12.1	71.6	124.0
52-week high/low	A$0.83	A$0.17	

Business description

Lithium Power International's main asset is its 51.6% interest in the Maricunga lithium brine project in Chile. Subject to securing a funding package, the first stage of the project is expected to produce 15.2ktpa of high-grade lithium carbonate starting from 2026. LPI also owns a number of early-stage exploration lithium projects in Western Australia.

Next events

Fastmarkets – Lithium Supply & Markets conference 2022	27–29 June

Analyst

Andrey Litvin +44 (0)20 3077 5700

mining@edisongroup.com

Edison profile page

Investment summary

Company description: Advanced lithium project in Chile

LPI holds 51.6% of the advanced-stage lithium brine project in Salar de Maricunga, Chile, which is situated in the well-known 'lithium triangle'. Based on the updated 2022 definitive feasibility study (DFS), the first stage of the Maricunga project is expected to produce 15.2ktpa of high-quality lithium carbonate over 20 years and is underpinned by the concessions formed under the old Chilean mining code and therefore do not require the CEOL. The remaining concessions (Litio 1–6) represent a significant expansion potential subject to obtaining the required permits. Despite the smaller footprint and relatively high capital intensity, the 15.2ktpa project has attractive economics supported by favourable lithium market fundamentals and low opex. It also significantly lowers the project's execution risk due to its permitted status. Maricunga is the most advanced greenfield lithium asset in Chile, which is one of the largest lithium-producing countries. LPI signed a non-binding MOU with Mitsui in May 2021 and is looking to advance the project to final investment decision (FID) in 2022.

Valuation: Smaller-scale operation yields healthy upside

Our main valuation scenario is based on the 15.2ktpa carbonate project supported by the old code concessions (OCC) and key operating and cost assumptions from the 2022 DFS. Our net present value (NPV) is based on the discounted cash flow to equity holders and reflects equity dilution at the prevailing share price. At a 10% discount rate, it yields the valuation of A$0.85/share for LPI. To this, we add the value of the remaining lithium resources represented by the Litio 1–6 concessions, which we estimate at A$0.18/share using the company's current EV/Resource multiple and an arbitrary 25% discount to account for the permitting related risks for these concessions. Our valuation is most sensitive to changes in the lithium price and discount rate. A 10% increase in our long-term carbonate price of US$17,000/t increases our base case NPV by c 20%, while a 1pp increase in the discount rate lowers our valuation by c 10%.

Financials: Funded through to the final investment decision

At end December LPI had a cash position of A$15.4m and we estimate that it will finish FY22 with cash of A$12.9m. We believe this should be sufficient to get it through to the FID. If the development goes according to the current plan, with the construction start in 2023 and project commissioning in 2026, the joint venture (JV) will have to secure project funding in 2022. As part of the package, we assume debt will represent 60% of the overall capital cost (US$626m) and expect it to be raised at the project level. This leaves c US$250m to be raised in equity. We expect LPI to contribute its 51.6% share on a pro-rata basis, which equates to c A$181m over 2023–26. This compares to the company's current market cap of A$237m and represents c 43% dilution.

We expect Maricunga to be highly cash generative. Based on our long-term lithium price and cost assumptions (direct cash cost of US$3,864/t), we expect the project to generate average direct EBITDA of c US$167m per annum.

Sensitivities: Political uncertainty in Chile

While lithium market fundamentals are favourable, we believe the main risk attached to the project is the uncertain political situation in Chile. Following the recent presidential elections, there appears to be significant opposition to lithium extraction, both from environmental and political points of view. Other risks include funding/dilution as well as commodity prices and lithium fundamentals.

Company description: Ahead of the lithium curve

LPI's main asset is a 51.6% interest in the Maricunga JV (Minera Salar Blanco, or MSB), an advanced-stage lithium brine project in Chile. This is a permitted project with the updated DFS published in early 2022. Maricunga is expected to produce 15.2ktpa of high-grade lithium carbonate over 20 years. The JV's key focus is now on securing a strategic partner and/or an offtake agreement, which should pave the way for the FID and the subsequent development of the project. LPI believes that it will be able to advance the project to the FID in 2022. With an estimated construction period of three years, the project is then expected to commence production in 2026. LPI also owns early-stage hard rock lithium exploration projects in Western Australia.

Maricunga JV overview

The project is comprised of 10 mining concessions in the northern part of Salar de Maricunga (Atacama region) in Chile. Maricunga is a mid-sized salar that forms part of the well-known 'lithium triangle' (Exhibit 1). The project's mining tenements consist of the four 'old code' concessions (OCC), which were constituted under the 1932 Chilean Mining Law and, according to LPI, do not require a special operating licence (CEOL) to produce lithium. The other six concessions (Litio 1–6) require the CEOL. The first stage of the project (15.2ktpa) is underpinned by the OCC, while the potential expansion can be supported by Litio 1–6, subject to obtaining the required permits (CEOL, CCheN, environmental).

Exhibit 1: Maricunga location

Source: LPI

The Maricunga project is the most advanced exploration and development asset in the salar, which at present does not host any producing operations. Other adjacent mining concessions in the salar are held by Sociedad Química y Minera (SQM), one of the world largest producers of lithium compounds, and Codelco, a large government-owned copper miner. LPI holds 51.6% in the JV that controls the project, with the remainder owned by Bearing Lithium (c 17%) and local partner Minera Salar Blanco (c 31%).

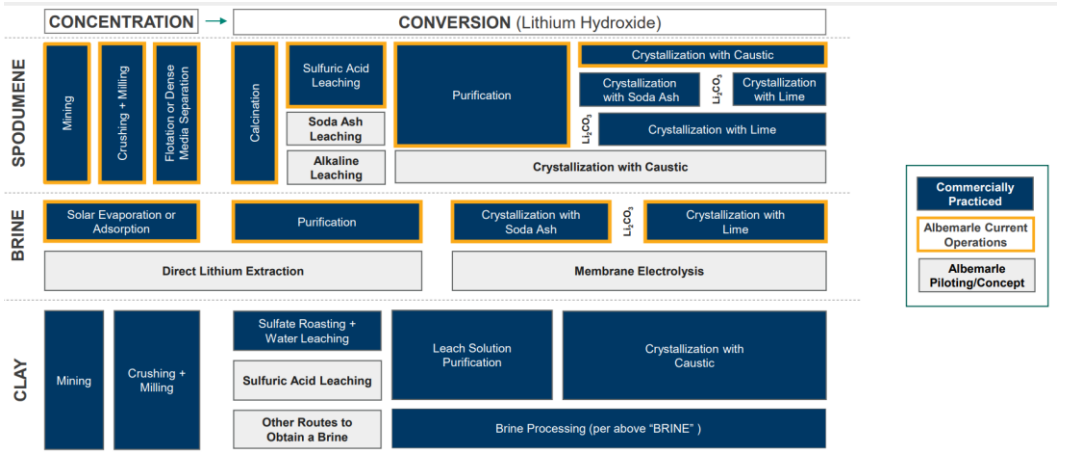
2022 updated feasibility study: Smaller scale, lower risks

In January 2019, LPI published a DFS on the Maricunga project. It followed the release of a preliminary economic assessment (PEA) in early 2017 and was based on the 2018 compliant mineral resource estimate. Subsequently, the company released an updated DFS on the project in January 2022. The 2019 DFS was supported by the project's combined lithium resources from all mining concessions (OCC and Litio 1–6). It envisaged production of 20ktpa of lithium carbonate (Li_2CO_3) over 22 years (year 1 to 11 from the OCC and then from Litio 1–6). The updated January 2022 study is based on the resources underpinned by OCC only and assumes production of 15.2ktpa of lithium carbonate over the 20-year life. While the reduced footprint (1,125ha for OCC vs 2,563ha for all tenements) results in a smaller scale and somewhat weaker project economics, it significantly lowers licensing and execution risks. The Litio 1–6 concessions provide extension or expansion potential, should the JV succeed in obtaining the required permits.

Lithium production: Brine evaporation versus hard rock mining

By way of background, lithium is typically produced via two main routes: saltwater brines evaporation and hard rock mining. The latter production process is broadly similar to a traditional mineral resource extraction whereby lithium bearing pegmatitic minerals, such as spodumene, petalite or lepidolite, are mined and processed into concentrate (eg SC6, or spodumene concentrate, containing 6% lithium dioxide), which is then converted into lithium carbonate or hydroxide (LiOH). In contrast, the saltwater brine is processed by water evaporation under sunlight. For that purpose, the brine, which contains lithium chloride (LiCl) as well as a variety of salts in the form of sulphites and chlorides of sodium, potassium, magnesium, boron, etc, is pumped into shallow ponds. After 12–18 months the concentration of salts and LiCl in the brine increases, salts are harvested from the ponds, while lithium is further processed into carbonate.

Exhibit 2: Lithium extraction and processing (based on Albemarle operations)



Source: Albemarle

Due to the specific production routes and chemical/mineral composition, lithium from pegmatite is typically processed into hydroxide, while brines produce carbonate. In mineral processing, spodumene concentrate obtained from mining and subsequent beneficiation of ore is calcinated to convert α-spodumene into the beta phase; β-spodumene then reacts with calcium oxide to form lithium aluminate, which following leaching reacts with calcium hydroxide to form lithium hydroxide. In the schematic brine processing, sodium carbonate is added to the concentrated brine solution after the evaporation and salt removal stage, where it reacts with lithium chloride to form lithium carbonate, which can then be filtered out from the solution.

Both carbonate and hydroxide are key raw materials used in production of positive electrodes in lithium-ion batteries and can be further processed into metallic lithium. In general, hard rock mining

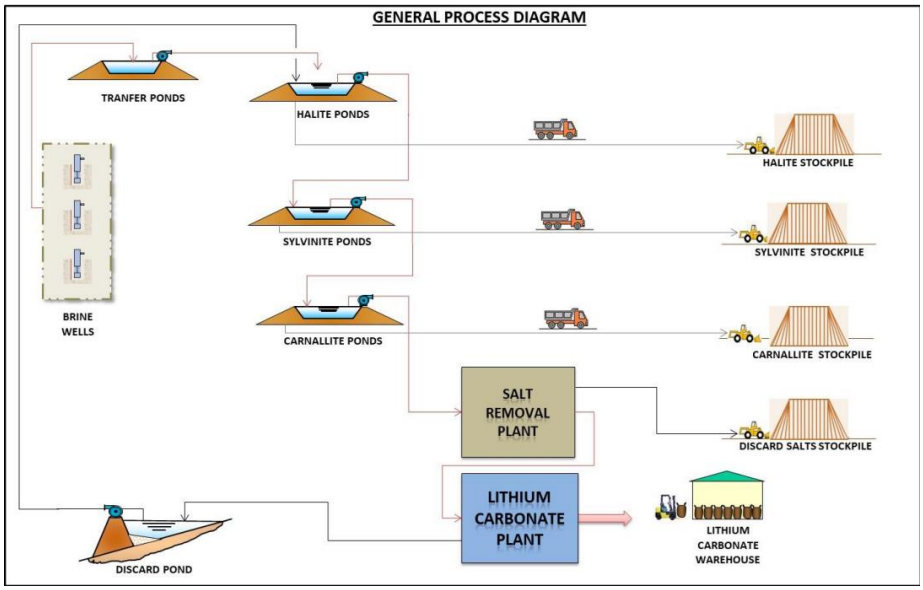
is more energy and capital intensive and characterised by higher operating costs compared to brine processing (which is however more water intensive but overall simpler). At the same time, it is more scalable (it is not uncommon to see an integrated 40–60kpa of LCE spodumene project compared to a 15–25ktpa brine operation) and historically produced higher value-added product. However, with the recent increase in the use of lithium iron phosphate (LFP) batteries in China, carbonate now trades on par with hydroxide.

Maricunga production process: A three-stage approach

With the exception of the salt removal plant, Maricunga's production process is similar to other saltwater salars. It is comprised of three main stages:

- **Solar evaporation ponds.** This is the initial stage that takes advantage of the natural water evaporation effect and solar radiation to concentrate the brine. Evaporation ponds operate in sequence and use the brine's natural saturation property through water evaporation and salt precipitation. When the brine reaches its saturation point it is transported to the next pond while salt is removed (harvested).
- **Salt removal plant.** Concentrated brine from the evaporation ponds is fed into the salt removal plant to continue brine purification and lithium concentration by means of a series of evaporation and crystallisation steps. During this stage, calcium, boron and magnesium are removed from the brine. The salt removal plant generates more concentrated brine feed to the lithium carbonate plant, improving processing efficiency and producing higher-quality material. Importantly, it allows control of the chemical composition and stability of the feed flow to the carbonate plant and therefor maintains the quality of the product.
- **Lithium carbonate plant**. This is a chemical plant that receives concentrated brine from the salt removal plant. The lithium-rich brine still contains some concentration of impurities that need to be removed through mixing with specific reagents and ion exchange. Following the elimination of contaminants, the contaminant-free brine enters the carbonation stage where it is placed in contact with soda ash to produce lithium carbonate.

Exhibit 3: Maricunga production process



Source: LPI

Updated reserves and resources: Estimates increased at depth

The 2022 DFS is based on the OCC mining concessions covering an area of 1,125ha, versus the 2,563ha area for the combined OCC and Litio 1–6 concessions considered in the 2019 study.

Despite the smaller footprint, the project's OCC lithium resources were significantly upgraded in the 2022 study by considering brines to a depth of 400m versus 200m in the earlier study. The project is now estimated to have a measured and indicated (M&I) resource of 358kt of contained lithium (1.9mt of lithium carbonate equivalent (LCE)) compared to 389kt of lithium (2.1mt of LCE) in the 2019 study. The project's proven and probable reserves for OCC were upgraded to 479kt of LCE compared to 346kt of LCE before. These reserves are sufficient to sustain a 15.2ktpa LCE operation for an estimated 20-year project life. The average lithium concentration in the updated P&P reserve is 976mg/l versus 1,115mg/l for the earlier combined OCC and Litio 1–6 P&P reserve estimate, while the brine's chemical composition is also broadly similar.

Exhibit 4: Lithium and potassium resources based on the OCC concessions (2022 DFS)

	Measured		Indicated		M+I	
	Li	K	Li	K	Li	K
Area, km^2	4.5		6.76		11.25	
Brine volume, km^3	0.162		0.216		0.378	
Mean grade, g/m^3	87	641	111	794	99	708
Concentration, mg/l	968	7,125	939	6,746	953	6,933
Resources, tonnes	**154,500**	**1,140,000**	**203,500**	**1,460,000**	**358,000**	**2,600,000**

Source: LPI

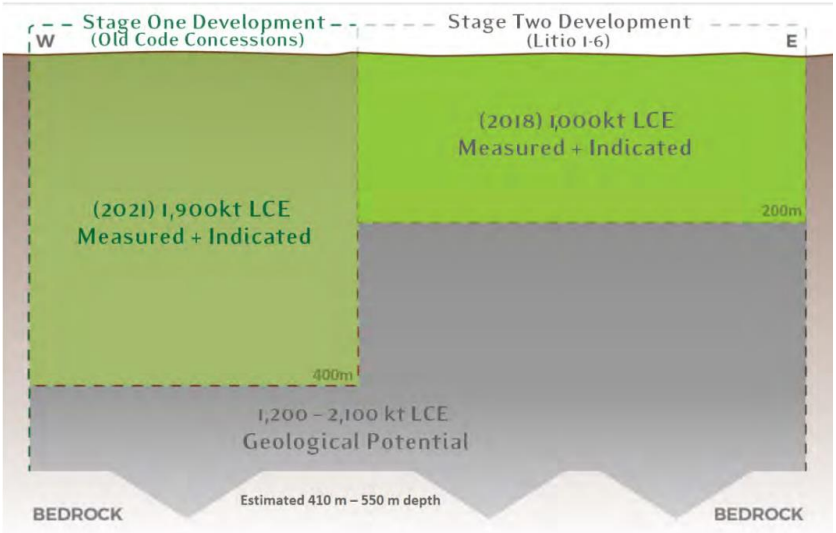
Exhibit 5: Brine mining reserve based on the OCC concessions (2022 DFS)

Category	Year	Brine volume, m m^3	Average Li concentration, mg/l	Contained Li, tonnes	Contained LCE, tonnes
Proven	1–7	19	1,024	14,000	75,000
Probable	1–8	13	1,024	19,000	102,000
Probable	8–20	60	950	57,000	302,000
Total	**1–20**	**92**	**976**	**90,000**	**479,000**
Total after assumed 65% recovery				58,000	311,000

Source: LPI

In the 2018 resource statement, Litio 1–6 had M&I resources of 184kt of lithium (979kt of LCE) defined to a depth of 200m. This resource and its extension potential to below the 200m depth level should be viewed in addition to the recently upgraded OCC estimates. The project also has significant potassium resources, which can be processed into potassium chloride (KCL). While this is currently outside of the project scope (and therefore has no value contribution), KCL production can be considered in the future and can potentially reduce operating cost as a by-product.

Exhibit 6: Schematic representation of the OCC and Litio 1–6 resources



Source: LPI

Brine quality and impurities

When it comes to the quality of the brine, lithium concentration is not the only parameter to consider. It is important to look at impurities that could have a significant detrimental effect on brine processing. For Maricunga, the main deleterious elements are magnesium (Mg), sulphate (SO_4) and calcium (Ca). Its brine is characterised by a relatively high lithium concentration and low potassium content, which is favourable for processing. At the same time, the project has a high proportion of calcium in its brines. Looking at the specific values, Maricunga's Mg/Li ratio of 6.5x is similar to Atacama, Chile's largest and only producing salar, while its sulphate to lithium ratio of only 0.64x is the lowest among the main exploration and producing salars in Latin America (Exhibit 7). The project's Ca/Li ratio of 12x significantly exceeds the levels reported in other salars.

The relatively high concentration of calcium and magnesium, which lowers the brine activity, as well as the levels of solar radiation at the salar are the main reasons for the introduction of an additional processing step in the form of a salt removal plant. It reduces the target concentration rate during the evaporation stage to only c 0.9% and therefore addresses the risk of the brine not reaching the required concentration of 3–4% lithium in the ponds. As a result, the salt removal plant considerably shortens the processing time. It also allows water to be recovered during processing, which is crucial as high water use during brine processing in general represents a major environmental concern, and reduces the consumption of reagents.

Exhibit 7: Brine chemical composition comparison for different salars (% weight)

	Salar de Maricunga	Salar de Atacama	Hombre Muerto	Salar de Cauchari	Salar del Rincon	Salar de Uyuni
	Chile	Chile	Argentina	Argentina	Argentina	Bolivia
Potassium (K)	0.69	1.85	0.62	0.47	0.656	0.72
Lithium (Li)	0.09	0.15	0.06	0.052	0.033	0.035
Magnesium (Mg)	0.61	0.96	0.09	0.131	0.303	0.65
Calcium (Ca)	1.12	0.03	0.05	0.034	0.059	0.046
Sulphate (SO_4)	0.06	1.65	0.85	1.62	1.015	0.85
Boron (B)	0.05	0.06	0.04	0.076	0.04	0.02
Mg/Li (x)	**6.5**	**6.4**	**1.4**	**2.5**	**9.2**	**18.6**
SO_4/Li (x)	**0.6**	**11.0**	**13.8**	**31.2**	**30.8**	**24.3**
Ca/Li (x)	12.0	0.2	0.9	0.7	1.8	1.3

Source: LPI, company data

Exhibit 8: Lithium content in brines comparison, mg/l

	Salar de Atacama	Salar de Maricunga	Salar de Olaroz	Salar de Hombre Muerto	Salar de Cauchari
Lithium	1,840	1,122	690	740	590

Source: LPI, industry sources

The chemical composition of the brine is broadly similar for the 2022 and 2019 feasibility studies, which cover OCC only and the combined OCC and Litio 1–6 resources respectively. Of note is a slightly lower calcium content in the 2022 DFS.

Exhibit 9: 2022 and 2019 BFS average brine composition analysis

	Li, g/l	Mg, g/l	Ca, g/l	SO4, g/l	B, g/l	Mg/Li	Ca/Li
2022 BFS	1.1	7.3	12.9	0.7	0.6	6.5	11.5
2019 BFS	1.1	7.3	13.5	0.7	0.6	6.6	12.0

Source: LPI

Opex and capex analysis

The 2022 DFS estimates the project's total capital cost at US$626m for 15.2ktpa, including the direct cost of US$420m and US$63m in contingencies. The main capex items are the evaporation ponds (US$90m), the salt removal plant (US$110m) and general services (US$84m). We note that the cost of the carbonate plant represents less than 10% of the overall capex. The total capital expenditure for the 15.2ktpa operation of US$626m compares to the previously estimated capital

cost of US$563m for the 20ktpa operation in the 2019 DFS. The main differences are the higher cost of the salt removal plant (the cost of mechanical equipment more than doubled to US$73m) and significantly higher indirect costs (no indirect cost breakdown was provided in the 2019 BFS). The 2022 DFS is one of the most recent studies for a lithium project in Latin America and therefore includes up-to-date cost estimates that reflect COVID-19 effects. The increased cost of the salt removal plant is also due to the additional test work undertaken by the company in 2021.

In terms of operating costs, the 2022 BFS estimates total opex at US$3,864/t of carbonate, which is similar to the 2019 DFS figure. The main cost components are chemicals and reagents (28% of total operating cost), and energy (30%). The project is expected to require both electrical and diesel power, with the latter used to generate steam for the salt removal plant and it represents a significant proportion of total costs. Given the high solar radiation rates at the salar there is a potential to replace diesel with solar energy. This could significantly reduce opex. We provide opex and capex breakdowns for the 2022 and 2019 studies in Exhibit 10. We note that opex excludes royalties that are discussed in the valuation section.

Exhibit 10: Maricunga's opex and capex breakdown for 2019 and 2022 DFS

Opex breakdown, US$/t LCE	2022	2019	Capex breakdown, US$m	2022	2019
Chemical reactives and reagents	1,099	1,040	Brine extraction wells	33.2	39.4
Salt removal	266	486	Evaporation ponds	89.9	115.3
Energy – electrical	342	370	Salt removal plant	110.3	66.4
Energy – thermal	821	658	Lithium carbonate plant	55.8	71.6
Labour	518	458	General services	84.0	103.3
Transport	181	237	Infrastructure	45.8	60.0
Maintenance and other	491	400	**Total direct cost**	**419.0**	**456.1**
Direct cash cost	**3,718**	**3,718**	Indirect cost	144.8	44.8
G&A	146	123	Contingencies	62.6	62.6
Total cash cost	**3,864**	**3,841**	**Total capital expenditure**	**626.4**	**563.5**

Source: LPI

The Maricunga's opex is broadly in line with the similar carbonate projects in Argentina and Mexico (Exhibit 11). However, its capital intensity is higher for both the 15.2ktpa and 20ktpa operations. This is especially so for the smaller-scale project whose lower capacity and higher capex compared to the 2019 DFS negatively affects the capital intensity. At the same time, we understand it includes the actual EPC proposals from the EPC bidding process and therefore represents an up-to-date realistic estimate. For the 2019 DFS, the project's capex and capital intensity are relatively high mainly due to the inclusion of the salt removal plant. We also note that some of the technical studies on the comparable projects exclude owners' costs and have a deferred capex component. While we have tried to adjust the numbers, there may still be discrepancies.

Exhibit 11: Opex and capex comparison for the selected lithium projects

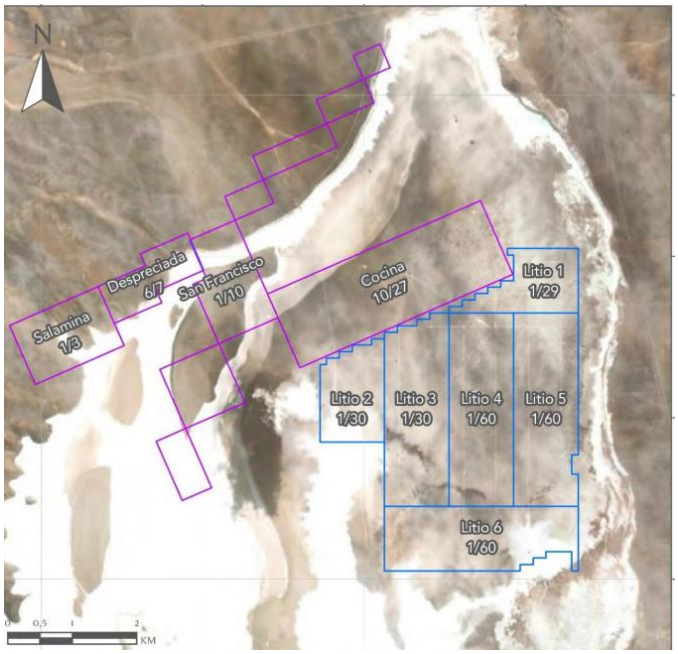
Company	Project	Country	Study	Date	Product	Production, LCE t	LoM, years	Opex, US$/t	Capital intensity, US$/t
LPI	Maricunga	Chile	Updated DFS	Jan-22	Carbonate	15,250	20	3,864	41,075
LPI	Maricunga	Chile	DFS	Jan-19	Carbonate	20,000	20	3,772	28,175
Neo Lithium	3Q	Argentina	FS	Nov-21	Carbonate	20,000	50	2,953	18,528
Allkem (Galaxy/Orocobre)	Sal de Vida	Argentina	BFS	Jun-18	Carbonate	25,000	40	3,144	18,960
Bacanora/Ganfeng	Sonora - Stage 1	Mexico	FS	Jan-18	Carbonate	17,500	4	4,039	24,000
	Sonora - Stage 2	Mexico			Carbonate	35,000	15	3,893	10,857
	Sonora - Stage 1&2	Mexico			Carbonate	31,316	19	3,924	25,546
LAC (Millennial)	Pastos Grandes	Argentina	FS	Jul-19	Carbonate	24,000	40	3,388	21,417
LAC (49%)/Ganfeng (51%)	Cauchari-Olaroz	Argentina	FS	Sep-20	Carbonate	40,000	40	3,579	14,118
Lake Resources	Kachi	Argentina	PFS	Apr-20	Carbonate	25,500	25	4,178	21,333
Liontown	Kathleen Valley	Australia	Scoping study	Nov-21	Hydroxide	86,000	23	5,864	23,256
Piedmont Lithium	Carolina	US	BFS	Dec-21	Hydroxide	30,000	11	3,657	32,933

Source: Company data

Licensing and permitting status

As mentioned above, the Maricunga project consists of the OCC and Litio 1–6 mining concessions. The OCC were formed according to the 1932 Chilean Mining Code and as such, according to the company, they do not require a special licence from the Chilean government to produce lithium. The OCC (essentially two main concessions that cover an area of 1,125ha) underpin the first stage of the Maricunga project (15.2ktpa). The 1983 exploitation concessions (Litio 1–6) do not allow exploitation of lithium without a CEOL but do permit the exploration. However, historically there has been no clear and transparent process for awarding the CEOL. Under the current legislation, without the CEOL, lithium exploitation can only be undertaken by the state, state-owned companies or under administrative concessions. We understand that the JV remains in communication with Codelco, which owns adjacent properties in the salar and holds a CEOL for the area, but these discussions have not yet yielded any results.

Exhibit 12: Maricunga JV concessions map



Source: LPI

At present, the only lithium producing salar in Chile is Salar de Atacama. Both SQM and Albemarle, the world's largest producers of lithium compounds roughly accounting for c 20% of the market each, operate in this salar. The exploitation rights in the Atacama Salar are held by the Chilean Economic Development Agency (CORFO) and are leased to SQM and Albemarle for a limited period of time. In addition to regular lease payments and other financial conditions, both SQM and Albemarle are required to pay a certain percentage of the lithium sales price to CORFO. According to SQM, these payments are incremental and at carbonate and hydroxide prices above $10,000/t and $12,000/t they could reach 40% of the price. We discuss royalty rates and other potential payments for the project later in the report, but note here that the BFS assumes Maricunga will be subject to a standard Chilean mining tax regime. The main reason for this is that the JV owns the mining concessions for the project and will therefore not be required to make lease payments to the state.

In 2019, the JV was a awarded a key operating licence by the Chilean Nuclear Energy Commission (CChEN) to produce, market and export lithium products from Salar de Maricunga. This permit is limited to the OCC concessions and allows production of 88,885 tonnes of lithium (c 473kt of LCE) over 30 years. It therefore covers the first stage of the project.

In 2020, the project received an environmental approval (EIA, the environmental impact assessment), which considered the construction and operation of a 58ktpa KCL plant (not included in the DFS) and a 20ktpa lithium carbonate plant over a period of 20 years. The JV also secured the water supply for the project through a long-term lease agreement, which was approved by the environmental agency.

Strategic agreement with Mitsui

In May 2021 LPI announced signing a non-binding MOU with Mitsui. The agreement covers offtake and financing rights for the first stage of the project as well as the potential expansion. Subject to Mitsui agreeing to provide a certain portion of the development capital, it will have the first right for an offtake agreement at the then prevailing lithium pricing. The agreement includes the following:

- Mitsui will have the right to purchase up to 15ktpa of battery-grade carbonate over 10 years, extendable for two consecutive five-year periods. The agreement might include a minimum price, discount and/or ceiling price for the initial period, if that's a requirement stipulated by the project finance structure. Any extensions will be based on the market pricing.
- Mitsui will have the right to participate directly in the funding of the project. The funding structure is expected to include equity, debt, streaming and advance payments against the offtake.
- MSB and Mitsui will create a partnership to expand Mitsui's lithium business in Chile using environmentally friendly processing technologies. In addition, MSB will use its best efforts to utilise the direct lithium extraction (DLE) technology that is currently being tested by Misui's technology partners.

Other assets: Early-stage hard rock lithium assets in Australia

In addition to the Maricunga project in Chile, LPI owns three exploration-stage hard rock lithium projects in Australia. Two of these projects are adjacent to the currently producing Pilgangoora and Greenbushes lithium mines in Western Australia. The projects are at an early stage of their development and are pre-resources.

Lithium market and price assumptions

Lithium demand: Explosive growth driven by energy storage needs

The lithium market is undergoing a profound transformation due to the rapid increase in the use of batteries in electric vehicles (EVs) and electronics. Historically, the vast majority of lithium was consumed in industrial applications such as speciality glass and lubricants, with (rechargeable) batteries representing only a small proportion of the overall consumption. However, driven by expanding energy storage needs (both e-mobility and grid related), lithium battery demand has experienced explosive growth in recent years (EV batteries now represent c 55% of total lithium demand). Thanks to the favourable EV demand fundamentals driven by decarbonisation and climate targets, this trend is expected to continue until at least 2030.

In its latest earnings release (Q421), Albemarle provided an update on its lithium demand forecast, suggesting total global lithium consumption of 1.5mtpa LCE in 2025 and 3.2mtpa in 2030. For comparison, in September 2021, the company expected lithium demand to grow to 1.1mtpa by 2025 and 2.5mtpa by 2030. Out of this total, lithium used in EV batteries was expected to expand at five- and 10-year CAGRs of 48% and 22% from 2020. We note that lithium demand in industrial applications exhibits growth rates similar to GDP of c 2–5% pa. Albemarle's latest lithium consumption growth assessment suggests a five-year total lithium demand CAGR of c 25% by 2025. In the same vein, in its Q321 earnings release, SQM expected global lithium demand to

exceed 1mtpa in 2025. In the shorter term, based on the Resources and Energy quarterly report (REQ) published by the Australian government, lithium demand reached 0.49mt LCE in 2021 versus 0.31mt in 2020, an increase of almost 60%, and is forecast to increase to 0.72mt LCE in 2023.

These ambitious expectations are underpinned by the growing EV adoption. While EV penetration and sales estimates vary depending on the source, we note that in its 2021 global EV outlook, the International Energy Agency (IEA) expected global EV stock across all transport modes to expand from 11m vehicles in 2020 to over 145m in 2030 (a c 30% CAGR) under the stated policy (base case) scenario (STEPS). This suggests annual EV sales exceeding 25m in 2030. In a more ambitious sustainable development scenario (SDS), the IEA sees global EV stock rising to 230m vehicles in 2030. In terms of battery capacity, this means 1.6TWh under STEPS and 3.2TWh under SDS. Assuming that an average battery uses c 0.8kg/kWh of lithium (it varies slightly based on the cathode chemistry, but NCM811 and LFP batteries use roughly the same amount of lithium), the IEA's current EV forecasts imply lithium consumption of c 1.3mt for STEPS and 2.6mt for SDS in 2030.

Lithium supply: Australia is likely to fill the gap

Given the strong EV and battery market fundamentals, the key question is whether the new lithium supply will be able to meet rising demand. While our analysis suggests that there is no shortage of lithium projects globally, there is clearly a limited number of projects that are either in development or at the FID stage and could therefore be brought in production in the short term (a typical project development timeline from resource definition to commercial production is up to seven years and could be further extended for battery-grade lithium due to the strict quality and testing requirements). The main reason for the relatively slow supply-side response is the unprecedented speed of the EV market transformation, driven by government policies and the protracted period of low lithium prices that discouraged investments in new supply. In Exhibit 13 we provide a list of selected advanced lithium projects outside China.

Exhibit 13: Selected advanced capacity expansion plans in the lithium industry

Company	Project	Region	Type	Product	Current capacity (LCE t)	Target capacity (LCE t)	Expected launch	Additional expansion potential (LCE t)
SQM	Salar de Atacama	Chile	Brine	Carbonate	120,000	180,000	end 2022	
	Salar del Carmen	Chile	Brine	Hydroxide	21,000	30,000	end 2022	
	Mt Holland (50% Wesfarmers)	Australia	Hard rock	Hydroxide	-	50,000	H224	
Albemarle	Salar de Atacama/La Negra III, IV	Chile	Brine	Carbonate	42,000	80,000	2022	
	Greenbushes (51% Tianqi Lithium)	Australia	Hard rock	Concentrate	120,000	120,000	-	
	Kemerton	Australia	Conversion	Hydroxide	-	50,000	2022/23	50,000
	Wodgina (40% Mineral Resources)	Australia	Hard rock	Concentrate	-	35,000	Q322	70,000
	Silver Peak	US	Brine	Carbonate	2,200	4,400	2025	
Allkem (Orocobre/Galaxy)	Salar de Olaroz	Argentina	Brine	Carbonate	15,000	40,000	H222	
	Mt Cattlin	Australia	Hard rock	Concentrate	25,000	25,000	-	
	Naraha	Japan	Conversion	Hydroxide	-	10,000	2022	
	Sal de Vida	Argentina	Brine	Carbonate	-	11,000	H223	5,000
	James Bay	Canada	Hard rock	Concentrate	-	-	-	40,000
Ganfeng	Cauchari-Olaroz (49% LAC)	Argentina	Brine	Carbonate	-	40,000	2022	
	Mt Marion (50% Mineral Resources)	Australia	Hard rock	Carbonate	60,000	60,000	-	
	Mariana	Argentina	Brine	Carbonate	-	-		
	Sonora (Bacanora)	Mexico	Clay	Carbonate	-	17,500	H223	17,500
	Sal de la Puna (65% Arena Minerals)	Argentina	Brine	n/a	-	-	-	-
Livent	Fenix/Hombre Muerto	Argentina	Brine	Carbonate	20,000	40,000	2023	20,000
Pilbara Minerals	Pilgangoora	Australia	Hard rock	Concentrate	60,000	72,000	H222	
POSCO	Sal de Oro	Argentina	Brine	Hydroxide	-	25,000	2024	20,000
Core Lithium	Finnis	Australia	Hard rock	Concentrate	-	22,581	2023	
Total (excluding conversion capacity)					**464,200**	**793,081**		**965,581**

Source: Company data

Assuming no major project delays, our analysis suggests that at least some 300ktpa LCE of upstream lithium capacity (ex China) could come on stream in the next two to three years. We note that the current capacity estimate takes into account the ongoing upgrade at SQM, which is yet to be fully reflected in the market, as well as the recent increase in spodumene concentrate capacity at Albemarle's Greenbushes. This analysis could be viewed in conjunction with production estimates in the December REQ that suggest global lithium output of 615kt LCE in 2022 (vs 485kt LCE in 2021) and 821kt in 2023. This is broadly in line with our assessment of the capacity roll out.

The main lithium producing regions are Latin America, Australia and China. Latin America is the biggest source of lithium from brines, while Australia is a major supplier of primary concentrates that are converted into higher value-add products such as hydroxide. Chile has traditionally been one of the largest producers of lithium (coming solely from Salar de Atacama), and although both SQM and Albemarle are expanding capacity, due to its strict permitting and regulations the country appears to be gradually losing its position (at least in the greenfield space) to Argentina. The latter has seen a string of greenfield lithium brine projects coming to the market. Some of these are in development and shown in Exhibit 13, but there are a number of relatively advanced projects that could potentially reach the market in the medium term (see Exhibit 11).

Finally, of note is a significant increase in both upstream and midstream lithium processing capacity in Australia. The recently announced restart of the Wodgina mine, which was decommissioned in 2019 due to low lithium prices, together with the greenfield Mt Holland project will add further to the currently operating large-scale Pilgangoora, Greenbushes and Mt Marion operations. Combined these assets could represent more than 500kt LCE concentrate capacity. This upstream capacity is expected to be matched by the hydroxide processing capacity that is being built in Australia and Asia/China. Overall, while lithium produced from brines often represents higher-quality 'battery-grade' material and the brine lithium projects are likely to be in demand, they are relatively small in scale and it appears that the main market balancing supply will come from Australia in the form of spodumene concentrate.

Lithium price expectations: Short-term market squeeze

Our price expectations assume that the market is likely to remain tight in the short term as the general shortage of new lithium capacity will be amplified by inevitable project delays. Coupled with high double-digit demand growth, this should provide support to the lithium prices. A higher price is also required to incentivise new project development. Following a period of weak demand and low prices in 2020–21 on the back of the COVID-19 related economic slump, the lithium market has seen a strong recovery starting from the end of last year, with contract and spot pricing enjoying sharp increases across all major products. The spot carbonate price delivered to China has recently exceeded the US$50,000/t level compared to the average 2021 price of only c US$7,000/t.

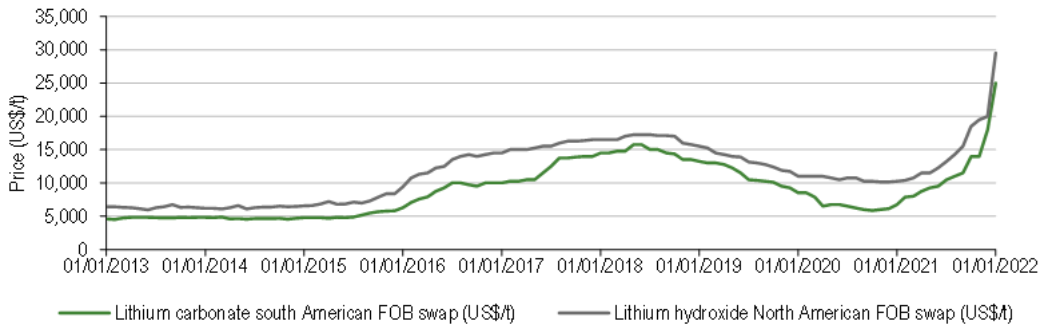
Contract prices should follow the spot level but remain at lower levels. Based on the current market fundamentals, we conservatively model the average contract hydroxide price at US$25,000/t in 2022–24, then gradually falling to our long-term price assumption of US$18,000/t in 2027. We assume a US$1,000/t price difference between carbonate and hydroxide, which is lower than the historical levels (driven by the traditional value chain for industrial applications) but could also be conservative given high carbonate demand in China due to the growing use of LFP batteries. We understand that the spot carbonate price is on par if not at a premium to hydroxide.

Exhibit 14: Edison contract lithium price expectations, US$/tonne

	2022	2023	2024	2025	2026	Long term
Lithium hydroxide	25,000	25,000	25,000	22,000	20,000	18,000
Lithium carbonate	24,000	24,000	24,000	21,000	19,000	17,000

Source: Edison Investment Research

Exhibit 15: Lithium hydroxide versus carbonate contract price



Source: Refinitiv

Our long-term lithium price assumptions are underpinned by the following considerations:

- The **cash production cost** of carbonate of c US$3,000–4,000/t for brines (outside China) and the cash cost of hydroxide production of c US$5,000–7,000/t for the Australian spodumene conversion route. Despite the industry-wide cost pressures, our long-term lithium prices provide enough headroom for a healthy internal rate of return in normal market conditions.
- As we noted earlier, in general we see **no shortage of greenfield lithium projects** in Australia, Latin America, the United States and Africa. In the near term, the demand-driven market is likely to result in a period of high lithium prices, which should incentivise new capacity, but we expect supply to eventually catch up with demand. We note a number of large-scale spodumene operations in Australia and Africa potentially coming on stream, with processing capacity being added in Australia and China.
- The inevitable increase in **lithium recycling**. Given the average EV battery life of c 10 years, with growing EV adoption we will eventually see a gradual increase in battery recycling, which could at some point represent a significant part of supply (similarly to other commodities).
- **Technological changes.** While lithium-ion batteries currently dominate the market for larger, energy intensive applications such as transport, it is highly likely that new technologies will emerge that may use either less lithium or no lithium at all. That said, in the rechargeable battery space, it is unlikely that any such new technologies will become commercial in the next five to 10 years.

Valuation and sensitivities

Our valuation of LPI is based on the Maricunga project. We consider the first phase of the project, with production of 15.2ktpa of carbonate over 20 years supported by the OCC concessions and key operating and cost assumptions outlined in the January 2022 DFS, as a base case valuation scenario. To this, we add the value of the remaining lithium resources represented by the Litio 1–6 concessions. Given the difficulty in selecting an appropriate peer group (different types of projects/products, different development stages and regional exposures), we chose to use the company's current EV/resource multiple, which we have discounted by 25% to account for the permitting uncertainty, as an appropriate approach to the Litio 1–6 resource valuation. We have also considered the valuation of the 20ktpa project supported by the combined OCC and Litio 1–6 resources with operating parameters provided in the 2019 DFS.

Our NPV of the Maricunga project is based on the discounted cash flow to equity holders (DCFE) and takes into account potential equity dilution. This approach assumes that the company pays out all free cash flow after debt repayments as a theoretical dividend to equity holders. We note that

LPI owns 51.6% of the project and accounts for it on an equity basis. For the purpose of our valuation, we have assumed that development funding is split 60%/40% between debt and equity and that the equity portion of funding is provided by the owners of the project on a pro rata basis, while debt is raised at a project level. After debt is paid out at the project level, the remaining cash flow is distributed among the three current owners of the project, with LPI receiving its effective 51.6% share.

Based on this approach to funding, our lithium price assumptions and key operating and cost parameters from the 2022 DFS, our base case diluted valuation of LPI is A$0.85/share. We have assumed that the company finances its A$182m equity portion of capex (51.6% of total estimated project equity funding of US$251m) at the prevailing share price of A$0.68 (which implies 266m new shares). Our NPV is based on a 10% discount rate and assumes project start in 2026 (ie three years of construction and one year to raise funds) and a three-year ramp up to full production.

Exhibit 16: Maricunga key financial and valuation assumptions (attributable basis)

		2022 DFS*	2019 DFS*
Project life	Years	20	20
Average annual carbonate production	ktpa	15.2	20.0
Average cash production cost	US$/t	3,864	3,841
Assumed royalty rate	%	3.0	3.0
Total development capex	US$m	626.4	563.5
Debt funding at the project level	US$m	375.8	338.1
Equity funding from LPI	A$m	181.0	164.0
Applied discount rate	%	10	10
Total discounted cash flow	A$m	519.8	695.1
Diluted number of shares	m	614.9	588.2
Diluted equity value to LPI	A$	0.85	1.18

Source: LPI, Edison Investment Research. Note: *2022 DFS is based on the OCC concessions, while 2019 DFS takes into account OCC and Litio 1–6 concessions.

To our NPV based valuation of the company we add the value of the Litio 1–6 lithium resources. LPI currently trades on an EV/Resource multiple (total M&I resource for OCC and Litio 1–6) of A$84.4/t of contained LCE. Assuming a 25% discount, this multiple implies a valuation of A$0.18/share when applied to the Litio 1–6 M&I resource of 0.98mt of LCE. This brings the company's overall valuation to A$1.02/share.

For illustrative purposes, we have also considered the valuation of the full-scale 20ktpa carbonate project, which was considered in the 2019 DFS. Based on the key operating parameters as outlined in the 2019 study and our long-term carbonate price of US$17,000/t, our diluted valuation of LPI for the larger project is A$1.18/share. We have used a 10% discount rate and therefore applied no risking related to the lack of the required production permits.

Our LPI valuation is most sensitive to changes in the discount rate and long-term carbonate pricing. The main sensitivities for the company's valuation based on the 15.2ktpa project are shown in the table below. Further, we note that a 10% change in the overall project capex results in a 7% reduction in LPI's valuation, while a 10% increase in opex leads to a 4% reduction in the NPV. The valuation sensitivities to changes in the funding mix and the share price used to calculate dilution are shown is Exhibit 18.

Exhibit 17: NPV (A$/share) sensitivities to changes in the long-term carbonate price and discount rate

	Long-term carbonate price, US$/tonne					
WACC	15,000	17,000	19,000	21,000	23,000	25,000
8.0%	0.86	1.05	1.25	1.44	1.64	1.83
10.0%	0.70	**0.85**	1.01	1.17	1.30	1.48
11.0%	0.63	0.77	0.91	1.06	1.20	1.34
13.0%	0.53	0.64	0.75	0.87	0.99	1.11
15.0%	0.44	0.54	0.63	0.73	0.83	0.93

Source: Edison Investment Research

Exhibit 18: LPI valuation (A$/share) sensitivity to changes in the funding mix and share price

	LPI share price, A$						
Debt/equity	0.40	0.50	0.60	0.68	0.80	0.90	1.00
30%/70%	0.54	0.63	0.70	0.76	0.83	0.88	0.92
40%/60%	0.57	0.65	0.73	0.78	0.85	0.90	0.94
50%/50%	0.60	0.69	0.76	0.81	0.87	0.92	0.96
60%/40%	0.65	0.73	0.80	**0.85**	0.90	0.95	0.98
70%/30%	0.71	0.79	0.85	0.89	0.94	0.98	1.01
80%/30%	0.79	0.86	0.91	0.95	0.99	1.02	1.04

Source: Edison Investment Research

In addition to the above sensitivities, the royalty rate potentially payable on carbonate sales represents a significant uncertainty in the project's economics and valuation. The company believes that because the project is based on the OCC concessions that were formed according to the old Chilean mining code, it should not be subject to any special royalty or lease payments regimes. Even though according to the current tax regime applicable in Chile, the specific mining tax rate for the project should be 1.2%, the 2022 DFS assumes a royalty rate of 3.0% payable on carbonate sales. This is also our base case assumption. The study notes that at present Chile is considering a number of options aiming at increasing royalties payable by mining companies. These options include a 3% rate on net sales and a 5% royalty on mining margin (defined as net profit excluding interest expense). Based on our model the latter is equivalent to a 2.4% sales-based royalty rate. We note that a 1pp change in our royalty rate assumption lowers our base case NPV valuation of LPI by only 1.4%. The valuation sensitivity to royalty payments is moderate due to the project's high profitability.

Financials

As of June 2021 (FY21), LPI reported cash of A$6.3m. Since the period end the company raised A$11.8m in net equity and sold its 70% interest in the lithium exploration properties in the Centenario salar in Argentina for A$1.2m. As a result, the company had a cash position of A$15.4m at the December quarter end. We estimate that LPI will end FY22 with cash of A$12.9m, which we believe should be sufficient to get it through the FID and potentially fund it up to the development stage. The company's main cash outflows are its investments in the JV as well as corporate overheads. In FY21, LPI spent A$6.5m in payments to the JV capital and burnt A$2.2m in employee and admin expenses.

If the project development goes according to the current plan with the FID in 2022 and construction start in 2023, the JV will have to secure a funding package in 2022. As part of this package, we expect debt financing to be raised at the project level and to potentially coincide with securing an offtake. This leaves c US$250m to be raised in total equity. Out of this amount, we would expect LPI to contribute its 51.6% share, which equates to c A$181m over 2023–26. Based on the current share price, this represents a dilution of c 43%.

Overall, we expect the project to be highly cash generative. Based on our long-term lithium carbonate price assumption of US$17,000/t and cost assumptions as outlined in the DFS (direct cash cost of US$3,864/t and total cash cost of US$4,230/t including 1.2% royalty), we expect the project to generate average EBITDA of c US$167m per annum.

Risks and sensitivities

We see a number of risks attached to the company and the Maricunga project. These include lithium pricing, project economics and funding, as well as the political situation and the overall

lithium extraction regulations in Chile. We have discussed the key financial and valuation sensitivities above.

We believe the main risk associated with the project is the uncertain political situation in Chile. Following the recent presidential elections, Chile's constituent assembly is debating motions for a new constitution, which could significantly alter the existing mining legislation. Some of the proposals include nationalisation of the large copper and lithium projects and a radical change in taxation aiming at increasing royalty payments. There is also a risk the concessions in the excluded areas can be revoked. The country is expected to vote on the new constitution later this year; however, there is no exact timing on this and it could be a protracted process that will continue affecting the investment climate.

At present the only two lithium producing operations in Chile are run by SQM and Albemarle. Both companies make significant financial contributions for their right to operate in the Atacama Salar. Earlier it was reported that the country announced an auction process to award five special operating licences to explore and produce 400,000t of lithium. While two of these licences were awarded to BYD and a local company, each offering to pay c US$60m, it was subsequently announced that the results of these auctions were suspended by a Chilean court. This underscores the opposition to lithium extraction in Chile, both from environmental and political points of view.

While the Maricunga project is at a relatively advanced stage and noting a non-binding MOU with Mitsui, it is yet to secure a binding offtake or a strategic partner within the battery value chain. We note that the use of the salt removal plant is new in lithium brine processing, although the design of the plant is based on established technology and the use of evaporators and crystallisers is common in the chemical industry. The process was developed by GEA Messo (a well-known German engineering company), and according to the BFS was able to produce battery-grade carbonate from Maricunga's brine (in particular, the original samples produced in 2018 indicated a 99.5% purity). The JV has undertaken a series of product tests at a semi pilot plant scale. However, given the novel processing approach for brines, additional product testing might be required to secure the offtake.

Exhibit 19: Financial summary

A$'000	2019	2020	2021	2022e	2023e
June YE	IFRS	IFRS	IFRS	IFRS	IFRS
INCOME STATEMENT					
Revenue	0.0	0.0	0.0	0.0	0.0
Operating costs	(3,014.7)	(2,942.3)	(2,448.0)	(2,652.0)	(3,000.0)
EBIT from continuing operations	(3,014.7)	(2,942.3)	(2,448.0)	(2,652.0)	(3,000.0)
Share of JV losses/profits	(9,108.0)	(3,786.9)	(1,967.3)	(1,900.0)	(2,000.0)
Net financing costs	241.7	183.6	8.2	0.0	0.0
Forex	1,816.5	(6,203.2)	(1,573.2)	(3,000.0)	0.0
Profit Before Tax	(10,064.5)	(12,748.8)	(5,980.3)	(7,552.0)	(5,000.0)
Tax	(147.5)	0.0	0.0	0.0	0.0
Profit After Tax	(9,917.0)	(12,748.8)	(5,980.3)	(7,552.0)	(5,000.0)
Minority interests	(57.5)	(95.7)	(57.3)	183.0	0.0
Discontinued operations	0.0	(319.2)	(191.1)	1,530.3	0.0
Net income	(10,154.4)	(12,972.2)	(6,114.1)	(6,204.7)	(5,000.0)
Basic average number of shares outstanding (m)	262	263	283	325	363
EPS, c	(3.87)	(4.94)	(2.16)	(1.91)	(1.38)
Dividend, c	0.00	0.00	0.00	0.00	0.00
Revenue growth (%)	N/A	N/A	N/A	N/A	N/A
Gross Margin (%)	N/A	N/A	N/A	N/A	N/A
EBITDA Margin (%)	N/A	N/A	N/A	N/A	N/A
Normalised Operating Margin	N/A	N/A	N/A	N/A	N/A
BALANCE SHEET					
Fixed Assets	33,157.7	29,300.8	32,696.3	34,661.3	52,323.1
Equity investments	30,124.0	25,074.9	28,594.9	31,094.9	48,056.8
PP&E	147.9	26.4	24.2	24.2	24.2
Exploration assets	2,885.8	4,199.4	4,077.2	3,542.1	4,242.1
Current Assets	15,650.6	7,391.8	6,802.0	13,145.9	9,445.9
Cash	15,341.5	7,141.6	6,280.7	12,941.2	9,241.2
Receivables	125.2	74.7	16.3	16.3	16.3
Other	183.9	175.5	188.4	188.4	188.4
Assets held for sale	0.0	0.0	316.7	0.0	0.0
Current Liabilities	(308.6)	(336.0)	(359.1)	(404.2)	(404.2)
Creditors	(250.4)	(293.8)	(322.2)	(322.2)	(322.2)
Short term borrowings and leases	(58.3)	(42.2)	(36.9)	(82.1)	(82.1)
Long Term Liabilities	0.0	0.0	0.0	0.0	0.0
Net Assets	48,499.7	36,356.5	39,139.3	47,402.9	61,364.8
Minority interests	(153.8)	(187.1)	(183.0)	0.0	0.0
Shareholders' equity	48,653.5	36,543.6	39,322.3	47,402.9	61,364.8
CASH FLOW					
Profit after tax	(10,211.9)	(13,067.9)	(6,171.4)	(6,021.7)	(5,000.0)
JV contribution	9,108.0	3,786.9	1,967.3	1,900.0	2,000.0
Forex	(636.0)	6,503.3	1,479.6	3,000.0	0.0
Other	113.9	853.5	382.2	(148.1)	0.0
Net operating cash flow	(1,626.0)	(1,924.3)	(2,342.4)	(1,269.7)	(3,000.0)
Payments for JV capital	(5,297.0)	(5,173.5)	(6,524.7)	(4,400.0)	(18,961.8)
Exploration	(952.3)	(1,202.2)	(205.8)	(700.0)	(700.0)
Equity financing	0.0	100.0	7,789.6	11,765.0	18,961.8
Other	(147.7)	0.0	452.6	1,235.1	0.0
Net Cash Flow	(8,023.0)	(8,199.9)	(830.7)	6,630.3	(3,700.0)
Opening net debt/(cash)	(23,364.5)	(15,341.5)	(7,141.6)	(6,280.7)	(12,941.2)
FX and other	0.0	0.0	0.0	0.0	0.0
Closing net debt/(cash)	(15,341.5)	(7,141.6)	(6,280.7)	(12,941.2)	(9,241.2)

Source: LPI, Edison Investment Research

Contact details	Revenue by geography
Level 7 151 Macquarie Street Sydney NSW 2000 Australia info@lithiumpowerinternational.com	N/A

Management team

CEO: Cristobal Garcia-Huidobro	Chairman: David Hannon
Cristobal Garcia-Huidobro is a civil engineer with more than 18 years' experience of developing and financing in mining, energy, infrastructure, finance and property projects. He led MSB's exploration and development programme for the Maricunga Salar. Mr Garcia-Huidobro was formerly the CIO of CENTINELA, an investment company with a significant portfolio under management worldwide. He also served as board and committee member on a number of mining, property and agricultural funds in North and South America.	David Hannon is the founding shareholder of LPI and has more than 30 years' experience in the finance industry with a focus on property, mining and international investing. He was founding director and former chairman of Atlas Iron, which grew to a more than A$3bn market capitalisation. Mr Hannon has operated a private investment group, Chifley Investor Group Pty, for over 15 years.
CFO, executive director: Andrew Phillips	**Chief Development Officer (MSB): Tarek Halasa**
Andrew Phillips has more than 25 years' commercial, financial and corporate governance experience internationally. He previously held senior management and board positions in several public and multinational companies including Aristocrat, Allianz, Hoya Lens and Sequoia Financial Group and has additional board experience in the small-cap resources sector. Mr Phillips is also the company secretary of LPI.	Tarek Halasa is a civil engineer with 17 years of international experience, specialising in project and cost management, feasibility studies and subcontractor management. Previously he held the role of construction coordinator for Bechtel for the past eight years, working on projects for BHP, Xstrata, Anglo, and BP.

Principal shareholders	(%)
HSBC Custody Nominees	10.2
Chifley Portfolios	6.2
Treasury Services Group/Nero Resources Fund	5.0
Citicorp Nominees	5.0
UBS Nominees	4.8
Minera Salar Blanco	4.7

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Frankfurt +49 (0)69 78 8076 960
Schumannstrasse 34b
60325 Frankfurt
Germany

London +44 (0)20 3077 5700
280 High Holborn
London, WC1V 7EE
United Kingdom

New York +1 646 653 7026
1185 Avenue of the Americas
3rd Floor, New York, NY 10036
United States of America

Sydney +61 (0)2 8249 8342
Level 4, Office 1205
95 Pitt Street, Sydney
NSW 2000, Australia