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# Lake Resources Ltd (LKE)

## Initiation: Lithium without ponds

### Recommendation

**Buy** (Initiation)

Price

**\$1.01**

Valuation

**\$1.37**

Risk

**Speculative**

### GICS Sector

Materials

### Expected Return

Capital growth	<b>36%</b>
Dividend yield	<b>0%</b>
Total expected return	<b>36%</b>

### Company Data & Ratios

Enterprise value	<b>\$1,135m</b>
Market cap	<b>\$1,212m</b>
Issued capital	<b>1,200m</b>
Free float	<b>100%</b>
Avg. daily val. (52wk)	<b>\$5.5m</b>
12 month price range	<b>\$0.053-\$1.035</b>

### Price Performance

	(1m)	(3m)	(12m)
Price (A\$)	0.62	0.43	0.06
Absolute (%)	64.2	134.9	1703.6
Rel market (%)	63.2	134.9	1678.9

### Absolute Price



SOURCE: IRESS

### Lithium brine done differently

LKE's focus is developing the Kachi lithium brine project located in north western Argentina. A Definitive Feasibility Study (DFS) due in Q2 2022 follows a March 2021 prefeasibility study (PFS) which evaluated a 25.5ktpa lithium carbonate project with average annual EBITDA of \$260m and a post-tax NPV<sub>8</sub> of US\$1,580m. Kachi is unique in that LKE is aiming to employ direct lithium extraction, ion exchange technology to recover lithium from its brine Resource. LKE's technology partner, Lilac Solutions, is earning 25% equity in the project through completing various process de-risking and product acceptance milestones. The DFS is also expected to outline cost improvements and examine modular up-scaling of production. If a final investment decision is reached in 2022, production at Kachi could commence from 2024.

### ESG benefits & uncommitted offtake add strategic appeal

Employing direct lithium extraction technology has enormous ESG benefits compared with incumbent brine and hard rock lithium production methods. Its key advantage is a smaller environmental footprint, lower carbon emissions and greater process control. Lilac's recent US\$150m funding round was supported by high profile venture capital funds and industrial groups focused on decarbonising technologies. LKE is also yet to commit any Kachi product offtake, adding strategic appeal when lithium ion battery OEMs are racing to secure product in a supply constrained market.

### Investment view: Buy (Speculative), Valuation \$1.37/sh

LKE is leveraged to the dominant market themes: decarbonisation and ESG investing. With an attractive development project, uncommitted product offtake and an independent share register, LKE has strategic appeal. We expect government policy, company strategy and media momentum will continue to focus on decarbonising technologies which are favourable for lithium demand and pricing sentiment. LKE is a project development company with prospective operations and cash flows. Our Speculative risk rating recognises this higher level of risk and volatility of returns.

### Earnings Forecast

Year ending 30 June	2022e	2023e	2024e	2025e
Sales (A\$m)	-	-	50	350
EBITDA (A\$m)	(4)	(4)	17	224
NPAT (reported) (A\$m)	(3)	0	(7)	95
NPAT (adjusted) (A\$m)	(3)	0	(7)	95
EPS (adjusted) (eps)	(0.3)	0.0	(0.4)	6.3
EPS growth (%)	na	na	-14078%	na
PER (x)	-387.2x	31748.0x	-227.1x	16.1x
FCF Yield (%)	-1%	-25%	-19%	10%
EV/EBITDA (x)	-283.7x	-283.7x	66.2x	5.1x
Dividend (eps)	-	-	-	-
Yield (%)	0%	0%	0%	0%
Franking (%)	-	-	-	-
ROE (%)	-3%	0%	-2%	26%

SOURCE: BELL POTTER SECURITIES ESTIMATES

# Initiation: Lithium without ponds

## Investment thesis: Buy (Speculative), Valuation \$1.37/sh

### ATTRACTIVE PROJECT WITH STRONG ESG CREDENTIALS

- LKE's Kachi (Argentina) lithium brine project has the potential to initially produce 25.5ktpa of high purity lithium carbonate from 2024 using direct lithium extraction. A DFS is due by mid-2022. LKE is also studying a potential Stage 2 expansion to 51ktpa lithium carbonate production at Kachi.
- The April 2020 Kachi PFS (and a subsequent March 2021 update) outlined a 25-year project with a capital cost of US\$544m and unit costs of US\$4,178/t. LKE estimate annual project EBITDA of \$260m at the refreshed PFS production rate of 25.5ktpa lithium carbonate and a price of US\$15,500/t (CIF Asia). LKE calculated a post-tax NPV<sub>8</sub> for the project of US\$1,580m.
- Employing direct lithium extraction, ion exchange technology has enormous ESG benefits compared with incumbent brine and hard rock lithium production methods. Key ESG benefits relate to a smaller environmental footprint (no evaporation ponds or mines), lower water use and lower carbon emissions. LKE will also look to renewable energy sources to power the Kachi process plant and peripheral infrastructure.
- Export Credit Agencies based in the UK and Canada have already indicated a willingness to debt/project finance around 70% of the project's capital requirements.

### UNCOMMITTED OFFTAKE; INDEPENDENTLY POSITIONED

- LKE is yet to contract its lithium product offtake with supply chain intermediaries or end users. This independence is becoming increasingly rare in a market which is expected to be in supply deficit over the medium to long term.

### STRATEGICALLY ALIGNED TECHNOLOGY PARTNERSHIP

- Kachi's direct lithium extraction process is based on ion exchange technology developed by project partner Lilac Solutions. Lilac is strategically aligned with LKE through a 25% project earn-in on the completion of technology testing, demonstration plant validation and end-product qualification. On the PFS case, Lilac would then contribute approximately US\$50m to fund the project's development.
- Lilac is a venture capital backed lithium extraction technology company based in Oakland, California. Technology investors including the Bill Gates-led Breakthrough Energy Ventures are key supporters of Lilac. The group recently announced a US\$150m Series B funding round which introduced SK Materials (Korea) and subsidiaries of BMW Group and Sumitomo Corporation to the Lilac share register.
- The application of ion exchange is new to lithium extraction. However, ion exchange is used extensively in water treatment applications and uranium production. The key advantage of ion exchange is the production of a lithium-rich solution without long lead-time and environmentally disruptive evaporation pond concentration. The ion exchange concentrated lithium eluate is processed into lithium carbonate or lithium hydroxide products while the spent brine is reinjected into the aquifer.

### DECARBONISATION & ESG PROVIDE STRONG MACRO BACKDROP

- Decarbonisation is expected to drive significant lithium demand growth through the rapid adoption of renewable electricity generation and electric vehicles, both requiring efficient energy storage solutions (i.e. lithium ion batteries).
- Auto manufacturers and OEMs are increasingly looking to ensure their entire product supply chains meet stringent ESG targets, as demanded by investors and consumers.

- Debt and equity providers are increasingly focussed on the ESG credentials of credit counterparties and investments with their own sources of capital opting to exclude carbon intensive and non-socially responsible funds and assets from their portfolios.

### Valuation methodology

Our LKE valuation of \$1.37/sh (enterprise value of \$1,679m) is supported by:

- Risked discounted cash flow valuations of Kachi Stage 1 (25.5ktpa lithium carbonate) and Stage 2 (expanding to 51ktpa LCE);
- Valuations for LKE's earlier stage lithium projects in Argentina;
- Allowances for corporate overheads; and
- Dilution from options on issue.

### Timeline & value catalysts

- Kachi maiden Mineral Resource estimate – November 2018. ✓
- Kachi PFS – April 2020. ✓
- Kachi high-quality product defined from pilot plant – October 2020 to March 2021. ✓
- Kachi refreshed PFS – March 2021. ✓
- Lilac Solutions 25% earn-in – September 2021. ✓
- **Ongoing – Funding arrangements** - Further expressions of interest and more developed agreements with Export Credit Agencies and other potential debt financiers with respect to Kachi capital cost financing.
- **Ongoing – Product offtake arrangements** – Details of conditional offtake agreements with end-users including indicative volumes and tenor.
- **Early 2022** – Updated Kachi Mineral Resource (November 2018 estimate 4.4Mt LCE).
- **Q2 2022:**
  1. Kachi DFS and expansion studies.
  2. Kachi Initial Mineral Reserve.
  3. Kachi Environmental and Social Impact Assessment (ESIA).
- **Mid-2022** – LKE Board Kachi Project Final Investment Decision.

### Capital requirements: Kachi equity component +\$150m

- Assuming the PFS capital cost estimate of US\$544m, that LKE dilutes to 75% ownership (following Lilac's earn-in), and that the project is 70% debt/project financed, LKE's equity capital requirement will be around \$150m. This estimate excludes owners' costs.
- LKE's capital requirement to develop the Kachi project will ultimately be determined by the scale of the project, company's equity in the project and the level of debt funding employed.
- Over the last 2 years, LKE's operating and investing cash outflows have averaged around \$1.7m per quarter.

## Capital structure & available funds

### STRONG CASH POSITION WITH OPTIONS CONVERTING

LKE has a strong balance sheet to progress its pre-development projects:

- At 30 September 2021, LKE had cash of \$46m and no debt.
- During October 2021, 90m options were exercised at \$0.35/sh, raising \$31m.
- LKE options have the potential to raise a further \$67m by June 2024.
- A further potential \$23m may be raised from other in-the-money options.

### LILAC EARN-IN FUNDS PRE-DEVELOPMENT ACTIVITIES THEN PRO RATA SHARE

LKE and Lilac have not disclosed the dollar amount that Lilac are investing as part of the 25% earn-in. However, key milestones for the earn-in are aligned with LKE's DFS and pre-development de-risking activities.

Lilac is in a strong financial position to meet these earn-in commitments. In September 2021, Lilac raised US\$150m in Series B financing. We expect that this funding could also adequately support Lilac's post-earn in equity contributions to develop the Kachi project, estimated to be around US\$50m (Lilac's 25% share) under the March 2021 PFS estimates.

### DEBT ADVISORS APPOINTED: ECAS INDICATE 70% DEBT FINANCING

In March 2021, LKE appointed SD Capital Advisory and GKB Ventures as joint financial advisors to structure and arrange project finance for the Kachi project. Both groups are independent consultancies with expertise in structuring and arranging project finance through Export Credit Agencies (ECAs).

LKE's announcements relating to potential Export Credit Agency financing include:

- **UK Export Finance (11 August 2021):** Expression of Interest to support approximately 70% of the total finance required (circa US\$380m) to develop a 50ktpa LCE project at Kachi, subject to standard project finance terms. UK Export Finance is the UK's official Export Credit Agency. Terms stipulate minimum UK content requirements with allowances for participation of other ECAs.
- **Export Development Canada (28 September 2021):** Letter of Interest to potentially work alongside UK Export Finance to support approximately 70% of the total finance required for Kachi, subject to standard project finance terms. Export Development Canada has indicated its ability to provide direct lending to the project up to US\$100m.

**Table 1 - LKE capital structure**

<b>Share price \$</b>	<b>\$1.01</b>
Issued shares m	1,200m
<b>Market cap \$m</b>	<b>\$1,212m</b>
Net debt \$m	-\$77m
<b>Enterprise value (undiluted) \$m</b>	<b>\$1,135m</b>
<b>Unlisted options</b>	
30c options expiring March 2023	25.3m
30c options expiring May 2023	1.5m
75c options expiring June 2022	89.5m
55c options expiring December 2024	35.0m
49c options expiring August 2024	6.0m
<b>Total options</b>	<b>157.4m</b>
<b>Diluted capital structure</b>	
Issued shares (diluted) m	1,357m
<b>Market cap (diluted) m</b>	<b>\$1,371m</b>
Net debt \$m	-\$77m
Options \$m	-\$97m
<b>Enterprise Value (diluted) \$m</b>	<b>\$1,197m</b>

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

## Peer comparison

**Table 2 - ASX-listed lithium companies (attributable)**

	EV (\$m)	Total LCE Resource (Mt)	Total LCE Reserve (Mt)	EV /Resource (\$/t)	EV /Reserve (\$/t)	Expected annual LCE production* (kt)	EV to production (\$'000/t)
Pilbara Minerals (PLS)	6,922	8.2	4.7	848	1,473	75	92
Orocobre (ORE)	5,882	18.5	1.5	318	3,926	114	51
Liontown Resources (LTR)	3,681	5.8	2.5	639	1,502	52	71
Ioneer (INR)	1,550	0.6	0.3	2,479	5,344	10	160
AVZ Minerals (AVZ)	1,309	8.3	2.7	157	485	53	25
Vulcan Energy Resources (VUL)	1,305	14.0	1.1	93	1,165	35	37
<b>Lake Resources (LKE)</b>	<b>1,165</b>	<b>3.3</b>	<b>0.0</b>	<b>353</b>	<b>na</b>	<b>19</b>	<b>61</b>
Sayona Mining (SYA)	1,105	1.8	0.0	600	na	24	45
Core Lithium (CXO)	815	0.5	0.2	1,703	3,367	29	28
Argosy Minerals (AGY)	371	0.2	0.0	1,682	na	11	34
Piedmont Lithium (PLL)	278	1.7	0.0	165	na	35	8
Jindalee Resources (JRL)	134	10.1	0.0	13	na	na	na
Mean				754	2,466		56
Median				476	1,502		45

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

# Financials & valuation methodology

## Risked, sum of the parts valuation: \$1.37/sh

Key components of our valuation include:

- **Kachi (LKE diluting to 75%) 25.5ktpa lithium carbonate:** Modelled as outlined below, broadly consistent with the LKE March 2021 refreshed PFS and further risked to take into account project stage.
- **Kachi expansion upside (LKE diluting to 75%):** A risked valuation to allow for the doubling of Kachi production to 51ktpa LCE.
- **Other projects (100% LKE):** LKE's other projects include exploration licences in Argentina prospective for lithium brine Resources (Couchari, Olaroz and Paso) and spodumene bearing pegmatites (Catamarca).
- **Corporate overhead allowance:** Present value of \$2.5m in annual corporate overheads not captured as part of our Kachi modelling.
- **Net cash:** An estimate of LKE's net cash position as of 31 October 2021.
- **Diluted capital base:** Assumed conversion of all in the money options.

Table 3 - Sum of parts valuation

	100%	100%	LKE equity	LKE equity	Risk	LKE equity
Projects LKE equity (unrisked)	US\$m	A\$m	%	A\$m	discount	(risked) A\$m
Kachi @ 25.5ktpa lithium carbonate	1,000	1,341	75%	1,006	30%	704
Kachi expansion	1,413	1,903	75%	1,427	40%	856
<b>Kachi @ 51ktpa LCE</b>	<b>2,413</b>	<b>3,245</b>	<b>75%</b>	<b>2,433</b>		<b>1,561</b>
Other projects		150	100%	150		150
<b>Total projects</b>				<b>5,017</b>		<b>1,711</b>
Corporate overheads						-31
<b>Enterprise value</b>						<b>1,679</b>
Net debt						-77
Options						-97
<b>Equity value (diluted)</b>						<b>1,854</b>
<b>Equity value (diluted) \$/sh</b>						<b>1.37</b>
Share price \$/sh						1.01
Valuation premium to share price						36%

SOURCE: BELL POTTER SECURITIES ESTIMATES

## Kachi (75% LKE): Risked discounted cash flow

We have modelled Kachi project operational assumptions consistent with LKE's March 2021 refreshed PFS including:

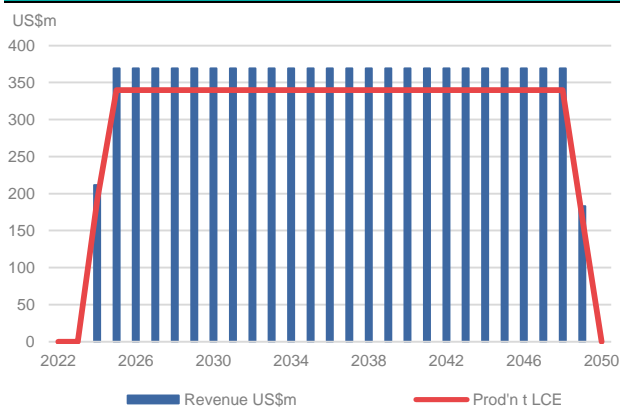
- Capital cost of US\$540m;
- Battery grade lithium carbonate production of 25.5ktpa;
- Project life of 25 years;
- Discount rate of 8%; and
- C1 cash operating costs of US\$4,178/t lithium carbonate.

Key assumptions differing from LKE's PFS include:

- **Lithium commodity prices:** Our long term battery grade lithium carbonate price assumption is US\$14,500/t (benchmark) compared with LKE's March 2021 refreshed PFS assumption of US\$15,500/t; and

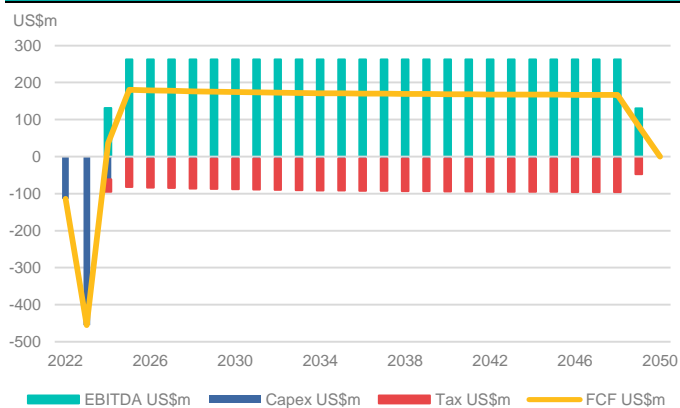
- **Owners costs:** We have (conservatively) inflated the capital cost of the Kachi project by 15% to account for owners costs, while retaining LKE’s assumed US\$91m contingency.
- **Risk discount:** Risk discount of 30% to account for the project’s stage of development (pre DFS).

**Figure 1 - Production & revenue (100%)**



SOURCE: BELL POTTER SECURITIES ESTIMATES

**Figure 2 - Earnings & free cash flow (100%)**



SOURCE: BELL POTTER SECURITIES ESTIMATES

**KACHI EXPANSION CASE: 51KTPA LCE**

We have also modelled an expanded Kachi project, with nameplate production of 51ktpa LCE. Assumptions for this case are relatively consistent with the 25.5ktpa base case with the exception of obvious adjustments including capital costs (project and sustaining) and unit costs.

**Figure 3 - Production & revenue (100%)**



SOURCE: BELL POTTER SECURITIES ESTIMATES

**Figure 4 - Earnings & free cash flow (100%)**



SOURCE: BELL POTTER SECURITIES ESTIMATES

# Kachi Lithium Project (Argentina)

## Located in South America's lithium triangle

LKE's Kachi Lithium Brine Project lease covers 740km<sup>2</sup> and is located in the Catamarca province of north western Argentina. The Catamarca province forms part of the South American lithium triangle which hosts some of the world's largest lithium brine projects and collectively accounts for around 40% of global lithium supply. Kachi is situated at an elevation of approximately 3,000m above sea level and is approximately 100km south-west of Livent's Hombre Muerto lithium operation and 50km south of Antofagasta de la Sierra township.

## PFS base case: +25.5ktpa LCE production for 25 years

LKE's current published Kachi project metrics are based on a PFS completed in April 2020 and refreshed in March 2021. LKE's estimates outlined in the following table are based on a 25 year, 25.5ktpa operation producing a very high quality lithium carbonate product for the lithium ion battery manufacturing sector.

Table 4 - Kachi PFS (LKE estimates)

		Prefeasibility study 30/04/2020	Refreshed prefeasibility study 17/03/2021
<b>Production Parameters</b>			
Construction Period (from end DFS)	Years	2	2
Project life	Years	25	25
<b>Production Rate - LCE</b>	<b>kt LCE/year</b>	<b>25.5</b>	<b>25.5</b>
Mineral Resource (Indicated)	Mt LCE	1.01	1.01
Lithium Grade to Direct Extraction Plant	Mg/L	250	250
Production Rate - Brine Extracted	Million m <sup>3</sup> /year	23	23
Recovery	%	83.2	83.2
<b>Key Financial Parameters</b>			
Sale price assumptions - Li <sub>2</sub> CO <sub>3</sub>	US\$/Tonne	11,000	15,500
<b>Capital Investment (at start-up)</b>	<b>US\$m</b>	<b>540</b>	<b>540</b>
Operating Cost (annual)	US\$m	107	107
<b>Cash Cost (Opex, C1)</b>	<b>US\$/tonne LCE</b>	<b>4,178</b>	<b>4,178</b>
IRR pre-tax	%	25%	42%
IRR post-tax	%	22%	35%
NPV <sub>8</sub> (NPV @ 8% discount rate) Pre-tax	US\$m	1,050	2,170
<b>NPV<sub>8</sub> (NPV @ 8% discount rate) Post-tax</b>	<b>US\$m</b>	<b>748</b>	<b>1,580</b>
Payback period from 1st product delivery	Years	5	3
Sales, annual	US\$m	280	400
Sales, life of project	US\$m	7,030	9,845
<b>EBITDA, annual</b>	<b>US\$m</b>	<b>155</b>	<b>257</b>
<b>EBITDA, life of project</b>	<b>US\$m</b>	<b>3,890</b>	<b>6,402</b>

SOURCE: LKE

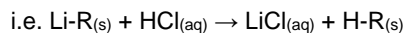
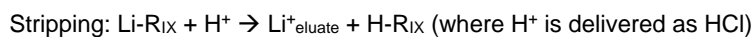
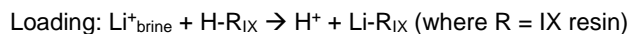
## Process technology: Direct lithium extraction via ion exchange

The Kachi project's key point of differentiation is the employment of direct lithium extraction using ion exchange technology. Ion exchange is currently used extensively in water treatment ("softening" or reducing calcium and magnesium content) and in uranium production.



### HOW ION EXCHANGE IN DIRECT LITHIUM EXTRACTION WORKS

Lilac's proprietary ion exchange technology is a chemical process whereby a targeted ion (in this case Li<sup>+</sup> cations) are exchanged with other ions using a charged resin in the form of a polymer bead. The bead is then stripped of the Li<sup>+</sup> cations using hydrochloric acid to produce an aqueous lithium chloride solution.



### ION EXCHANGE IN URANIUM PRODUCTION

The ion exchange process has been the key technology for the production of nuclear materials since the beginning of the nuclear energy age in the mid-20<sup>th</sup> century.

The major applications of ion exchange technology in uranium production include the extraction and refining of uranium from (in situ or heap) leach solutions, chemical control of coolant water, and in spent fuel reprocessing and waste treatment.

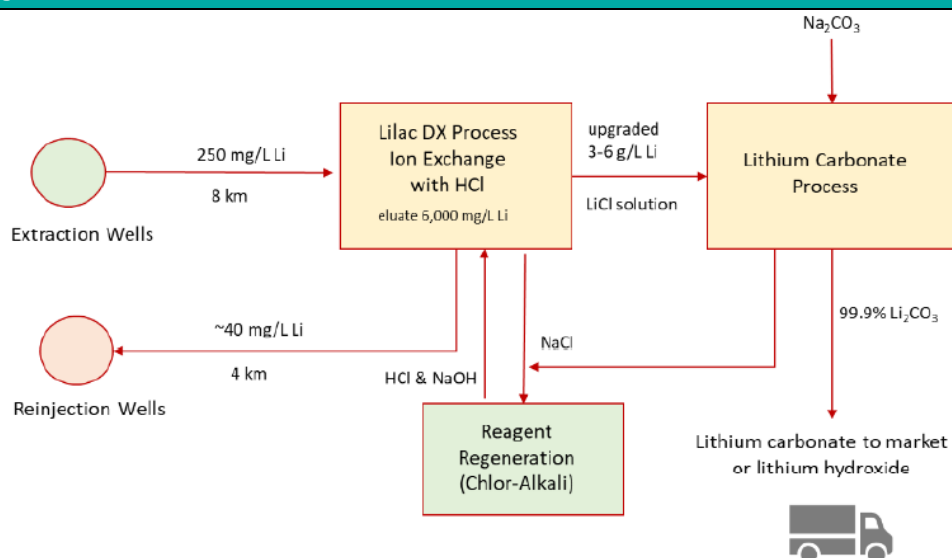
Today, over 50% of global primary uranium supply is produced by in situ leaching which is reliant on ion exchange. Pregnant solution from in situ production wells is pumped to treatments plant where the uranium is recovered in a resin/polymer ion exchange or liquid ion exchange (solvent extraction) system.

### PROCESS FLOW SHEET: BRINE & LITHIUM EXTRACTION THEN CONVERSION

The Kachi project flow sheet as defined in the PFS comprises the following key steps:

1. **Brine extraction:** Brine is extracted at a rate of around 23 million cubic metres and lithium concentration of 250mg/L from the salar using conventional shallow water bores (the Kachi Resource has been limited to a depth of 400m) and pumped 8km to a storage pond adjacent to the direct extraction plant.
2. **Ion exchange:** The brine is then filtered and processed in the direct extraction plant, which recovers and concentrates lithium to a lithium chloride eluate stream using ion exchange. The lithium depleted brine from this step is reinjected into the salar.
3. **Reverse osmosis concentration:** The eluate stream is further concentrated using reverse osmosis. Studies completed by LKE and Lilac have predicted lithium solution concentrations ranging 24,000-60,000mg/L at this stage.
4. **End-product conversion:** The concentrated lithium chloride eluate is converted into lithium carbonate through a standard treatment with a number of process reagents including sodium carbonate, sodium hydroxide and hydrochloric acid. Pilot plant test work completed by Lilac has demonstrated a clean lithium chloride eluate, which was converted by an independent third party, Hazen, to a 99.97% lithium carbonate product. There is also potential for the production of lithium hydroxide at this stage.

Figure 5 - Process flow sheet



SOURCE: LKE

### KEY BENEFITS OF DIRECT LITHIUM EXTRACTION VIA ION EXCHANGE

There are significant technical, cost and ESG advantages to direct lithium extraction through ion exchange when compared with conventional brine evaporation and hard rock mine operations:

- **Smaller project footprint:** LKE estimate that the Kachi project will occupy a land area of less than 1km<sup>2</sup>. This footprint compares favourably to the extensive environmental land impact of brine evaporation ponds (20km<sup>2</sup>) and open pit pegmatite mines (5km<sup>2</sup>).

LithiumAmericas' (TSX:LAC, not rated) Cauchari-Olaroz lithium project (Stage 1 producing 40ktpa LCE) required 40 evaporation ponds covering an area of 20km<sup>2</sup>. Orocobre's (ASX:ORE, Hold TP\$9.30/sh) Olaroz lithium project (Stage 1 and 2 producing up to 42.5ktpa) evaporation ponds are expected to cover more than 13km<sup>2</sup>.

- **Faster production ramp-up:** LKE estimate that Lilac's ion exchange process can produce a lithium chloride concentrate within around 3 hours of raw brine introduction. By comparison, brine evaporation projects require 1-2 years (watching water dry) to produce a concentrated intermediate lithium product by solar and wind evaporation. Brine evaporation projects ramp up over a number of years, adding significant working capital and financial costs to the project's development with variable product quality.
- **Greater product control:** More selective ion exchange processing reduces the introduction of deleterious elements and impurities, enabling premium battery grade end products.
- **Smaller carbon footprint:** The Kachi project flow sheet involves pumping lithium brines, ion exchange processing and lithium carbonate production. Each of these steps can readily be powered by renewable electricity generation. By comparison, open pit mineral lithium projects typically require diesel powered haulage and energy intensive comminution. Spodumene needs to be converted into a lithium product usually involving high temperature, energy intensive conversion (roasting).
- **Scalable:** The front end of the Kachi flow sheet involves a brine production bore-field and Lilac's modular direct lithium extraction ion exchange technology. Scaling up the bore field and Lilac's modular components is relatively simple and capital cost effective when compared with expanding brine evaporation or mineral projects.

## PFS Capital & operating cost estimates

The following table outlines LKE's PFS capital and operating cost estimates. The estimates assume:

- The prefeasibility production rate of 25.5ktpa of lithium carbonate.
- Capital costs exclude owner's costs, which typically relate to permitting and approvals, financing costs, land costs, inventory and working capital builds and insurance.
- Operating costs exclude corporate overheads, taxes and royalties.
- Utilities (40% of operating cost estimates) include gas energy sources for site electricity and process energy supply at a cost of US\$21/MMbtu (which are planned to be largely replaced by solar power).

The PFS was completed to an approximate -20% / +30% level of accuracy for capital and operating cost estimates.

Figure 6 - PFS capital cost estimates			Figure 7 - PFS operating cost estimates			
Capital costs	US\$m	Proportion %	Operating Cost Factor	US\$m/year	US\$/t LCE	Proportion %
Well field	25	5%	Labour	10	394	10%
Processing	161	30%	Utilities (electricity, gas & water)	43	1,677	40%
Site infrastructure	18	3%	Reagents	16	630	15%
Site works (construction)	195	36%	Consumables	22	876	21%
<b>Direct costs</b>	<b>399</b>	<b>73%</b>	Maintenance	5	185	4%
EPCM	54	10%	General & Administration	11	416	10%
Owner's costs not included			<b>Total</b>	<b>107</b>	<b>4,178</b>	<b>100%</b>
Contingency	91	17%				
<b>Indirect costs:</b>	<b>145</b>	<b>27%</b>				
<b>Total</b>	<b>544</b>					

SOURCE: LKE

SOURCE: LKE

## ROYALTIES, EXPORT DUTIES & CORPORATE TAXES

The abovementioned cost estimates exclude taxes and royalties:

- **Royalties:** Levied at 3% of the "mine mouth" value of brine production are payable to Catamarca Province.
- **Export duty:** The Argentine government levied a peso denominated duty on lithium exports from mid-2018. We estimate that this export duty has averaged around 4% of the revenue value for ORE's Olaroz project and that a similar amount will be levied on Kachi.
- **Corporate tax:** On 16 June 2021, a bill was passed in the Argentinian Senate to increase the top Argentinian corporate tax rate to 35%. This corporate tax rate had previously been expected to reduce from 30% to 25% with effect from 2021.

## OPPORTUNITIES TO IMPROVE ON OPERATING COST ESTIMATES

We believe there are two avenues to materially improve on operating cost estimates:

1. Energy usage assumes high priced gas supply (greater than US\$20/MMbtu). LKE are examining the use of photovoltaics to supply the process and ancillary energy requirements. We expect that the opportunity may exist for third party owned solar infrastructure to supply the Kachi project, reducing capital and operating costs.
2. The prefeasibility throughput rate is 25.5ktpa lithium carbonate. A Stage 2 expansion to 51ktpa LCE is also being considered and should result in economies of scale, reducing unit costs.

## Next steps: Optimisation to DFS by mid-2022

LKE have progressed the Kachi project to DFS stage. This study and an ESIA are due for completion by mid-2022. Together with the DFS, we expect LKE will provide further detail on the project's Resource (initial Reserve to be announced), the project's production expansion and product optimisation potential. By the time the DFS is published, LKE should have further confidence relating to Lilac's ion exchange process testing and end product validation.

### PROJECT OPTIMISATION: SCALE & PRODUCT MIX

Energy supply and production scale (discussed above) will be key optimisation parameters for the DFS.

We also expect that recent market outreach for product offtake and debt financing could result in LKE progressing feasibility studies for a lithium hydroxide conversion back-end to the project (alongside lithium carbonate). This additional processing capacity would diversify the project's product options and end user-base

### TECHNOLOGY TESTING & VALIDATION

Key commercial terms of Lilac's 25% earn in to the Kachi project include completion of technology testing, development of an on-site demonstration plant and meeting agreed end-product battery qualification specifications.

### ONGOING OUTREACH TO LITHIUM BATTERY SUPPLY CHAIN PARTICIPANTS

The lithium ion battery supply chain is developing rapidly. Since the mid-2010s, many notable projects have had issues producing lithium concentrates and chemicals to the specifications required by lithium ion battery cathode manufacturers. We expect that with increased product volumes from Lilac's demonstration plant, LKE will ramp-up market outreach to lithium supply chain participants (end users and commodity traders) in preparation for product offtake negotiations.

## Mineral Resource estimate

The Kachi Mineral Resource estimate was announced in November 2018.

The Kachi Indicated Resource of 1.0Mt LCE, assuming the PFS production rate of 25.5ktpa lithium carbonate and average recovery of 83%, is sufficient to support production for more than 30 years.

**Table 5 - Mineral Resource estimate**

Mineral Resource estimate (Nov 2018)	Indicated		Inferred		Total	
	Li	K	Li	K	Li	K
Area km <sup>2</sup>	17.1		158.3		175.4	
Aquifer volume km <sup>3</sup>	6.0		41.0		47.0	
Brine volume km <sup>3</sup>	0.7		3.2		3.9	
Mean drainable porosity % (specific yield)	10.9%		7.5%		7.9%	
Element	Li	K	Li	K	Li	K
Weighted mean concentration mg/L	289	5,880	209	4,180	211	4,380
Resources t	188,000	3,500,000	638,000	12,500,000	826,000	16,000,000
<b>LCE Mt</b>	<b>1.0</b>		<b>3.4</b>		<b>4.4</b>	
Potassium Chloride Mt		6.7		24.0		30.7

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

# Lilac Solutions: LKE's Kachi partner

## Silicon Valley direct lithium extraction tech start-up

Lilac Solutions Inc is an Oakland, California-based lithium extraction technology company. Founded in 2016, Lilac has developed a patented ion exchange technology that facilitates the production of lithium from brine resources.

## Funding rounds commenced in 2018; US\$150m raised this year

Lilac's funding rounds to date include:

- January 2018: US\$800,000 seed financing.
- January 2019: US\$2.5m led by PRIME Impact Fund and Tribeca Early Stage Partners, venture capital funds based in Boston and New York, respectively.
- February 2020: US\$20m in Series A funding led by Breakthrough Energy Ventures and including participation from MIT's The Engine, Lowercase Capital and the Grantham Foundation. Breakthrough Energy Ventures is a US\$1b fund established to support companies with the potential to significantly reduce greenhouse gas emissions.
- September 2021: US\$150m in Series B financing, introducing new investors including Lowercarbon Capital, SK Minerals (Korea), BMW i Ventures, Presidio Ventures (Sumitomo), MCJ Collective, Earthshot Investors and Valor Equity Partners (whose CIO is on the board of Tesla).

### **BREAKTHROUGH ENERGY VENTURES: FOUNDED BY BILL GATES**

Founded in 2015 by Bill Gates and a coalition of private investors concerned about the impacts of accelerating climate change. The group encourages the development of new net-zero emission energy technologies.

### **THE ENGINE: MIT BACKED**

Established by MIT leaders to support start ups that seek to create material positive impact on society. The fund aims to bridge the gap between discovery and commercialisation by providing long-term capital, knowledge, networks and laboratory infrastructure.

### **GRANTHAM FOUNDATION**

Founded in 1997 by Jeremy and Hannelore Grantham. Jeremy is co-founder and Chairman of investment management firm GMO, LLC. The Grantham Foundation invests in technologies to redesign energy systems, improve soil health, save the ocean from acidification and directly recapture carbon from the atmosphere.

### **LOWERCARBON CAPITAL**

Founded in August 2021 by Chris Sacca, who made Lowercase Capital one of the most successful venture capital funds in Silicon Valley by investing early in Twitter, Uber and Instagram. Lowercarbon Capital invests in companies which aim to commercialise on cutting CO<sub>2</sub> emissions.

## Lilac's 25% Kachi project earn-in; US\$50m funding

On 22 September 2021, LKE and Lilac announced a partnership whereby Lilac will progressively earn in to a maximum 25% interest in the Kachi project. This conditional agreement formally aligned Lilac as technology partner to LKE's lithium brine project.

The dollar investment required for Lilac's 25% earn-in has not been disclosed. However, the earn-in milestones are aligned with de-risking the process technology and end product qualification by potential offtake partners.

The key commercial milestones of Lilac's 25% earn-in are as follows:

- **Stage 1:** Lilac funds the completion of technology testing for an initial 10% interest;
- **Stage 2:** Lilac funds the construction of an onsite demonstration plant at the Kachi project for a further 10% interest; and
- **Stage 3:** Refined lithium chemical product achieves battery qualification standards with potential offtake partners for a final 5% interest.

Once Lilac has earned its 25% interest, both parties will contribute to fund the development of the Kachi project on a pro rata basis. LKE's current estimate of Lilac's earn-in contribution of around US\$50m is based on the Kachi PFS capital cost estimate of US\$544m, project finance funded to 70% and including allowances for owners' costs. There are dilution provision in place if capital contributions are not pro rata.

### Lilac's other application of ion-exchange lithium extraction

According to Lilac's publicly available press releases, the company's relationship with LKE is the most advanced in terms of the application of ion-exchange to direct lithium extraction. Lilac has also advanced a geothermal project with lithium extraction in southern California with Controlled Thermal Resources Limited (private)

However, Lilac has previously applied its technology to other non-brine lithium projects, most notably Cypress Development Corp.'s (TSX-V:CYP) Clayton Valley project (see press release summary below). CYP's August 2020 (amended March 2021) NI 43-101 Prefeasibility Study Technical Report for Clayton Valley Lithium Project stated:

*"Lilac Solutions was contracted to test their proprietary lithium IX resin. Results are positive at higher levels of pH than present in the PLS feed solution. Greater than 85% of the lithium was stripped into a solution grading 5,000 ppm Li with low levels of Na and K. Further testing of the Lilac resin remains an option."*

#### **PRESS RELEASE SUMMARY: CYPRESS DEVELOPMENT CORP. (TSX-V:CYP)**

(16/07/2019) Lilac successfully applied its ion-exchange technology to clay-hosted lithium deposits. In mid-2019 CYP and Lilac announced high lithium recoveries from CYP's Clayton Valley Project in Nevada. Clayton Valley is located 215 miles southeast of Reno, Nevada and features a large clay-hosted lithium deposit with 3.8Mt LCE.

CYP has developed a leaching process which produces a lithium rich sulphate leachate. Lilac was then able to apply its ion-exchange technology to produce a high-purity lithium solution suitable for conventional processing into lithium carbonate or lithium hydroxide products. Reported lithium recoveries were 83% with more than 99% of sodium, potassium and magnesium impurities rejected.

# Timeline: Kachi from concept to project

## **LATE 2017 – DRILLING COMMENCES AT KACHI**

LKE commences a maiden drilling campaign at Kachi, intersecting highly conductive brines in porous sandy horizons. Previous augur sampling had displayed positive lithium results.

## **MID-2018 – KACHI DISCOVERY CONFIRMED**

The drill program at Kachi confirms a large scale, deep salt lake basin of 22km by 8km and 400m deep. Results from seven Resource drill holes from four drill platforms with variable depths up to 405m demonstrate that lithium brine is present from near surface to over 400m depth in drill holes spaced 11km apart across the project. Highest grades average 306mg/L with low impurities and low average Mg/Li ratio of 4.3.

## **SEPTEMBER 2018 – LKE PARTNERS WITH LILAC SOLUTIONS**

LKE announces a partnership with Lilac Solutions, Inc, to leverage Lilac's proprietary ion exchange technology for the Kachi brine project.

## **NOVEMBER 2018 – MAIDEN KACHI RESOURCE OF 4.4MT LCE ANNOUNCED**

LKE announce a maiden Mineral Resource estimate of 4.4Mt LCE at the Kachi brine project. The Resource includes 1.0Mt LCE in the Indicated Resource category and was based on the results from 15 drill holes. The Resource remains open at depth and laterally.

## **DECEMBER 2018 – PHASE 1 ENGINEERING STUDY WITH LILAC UPDATE**

A Phase 1 Engineering Study with Lilac shows potential for lithium production costs to be US\$2,600/t (+/- 30%) with lithium recoveries of 85-90% on from 300mg/L lithium brines. The process produced samples with lithium concentrations of greater than 25,000mg/L.

## **APRIL 2019 – KACHI PFS COMMENCES**

LKE announces the commencement of a PFS at Kachi, examining both conventional evaporation pond processing and direct extraction methods. An on-site pilot plant is planned to further assess Lilac's ion exchange technology.

## **APRIL 2020 – KACHI PFS ANNOUNCED**

LKE announce the results from its Kachi PFS: Annual battery grade lithium carbonate production of 25.5kt, post-tax NPV<sub>8</sub> of US\$748m and IRR of 22% using an US\$11,000/t lithium carbonate price assumption. The prefeasibility was supported by brine test work completed at Lilac's pilot plant located in Oakland, California. The project progresses to DFS stage.

## **OCTOBER 2020 – 99.97% BATTERY QUALITY LITHIUM CARBONATE PRODUCED**

LKE confirm conversion of Kachi brines into battery quality lithium carbonate. Samples were produced from lithium chloride eluate from Lilac's ion exchange technology pilot plant. This product performed successfully in NMC622-based lithium-ion battery cells base on initial testing by Novonix in March 2021.

## **MARCH 2021 – REFRESHED PFS HIGHLIGHTS FURTHER VALUE AT KACHI**

LKE release a refreshed Kachi PFS, holding all parameters equal to the April 2020 study with the exception of pricing assumptions. Under a US\$15,500/t lithium carbonate price assumption, the Kachi NPV<sub>8</sub> increases to US\$1.58b (previously US\$11,000/t resulting in a NPV<sub>8</sub> of US\$748m).

**SEPTEMBER 2021 – LILAC KACHI EARN-IN ANNOUNCED**

LKE and Lilac announce Lilac's 25% Kachi project earn in. Lilac will contribute technology, engineering teams and an on-site demonstration plant.

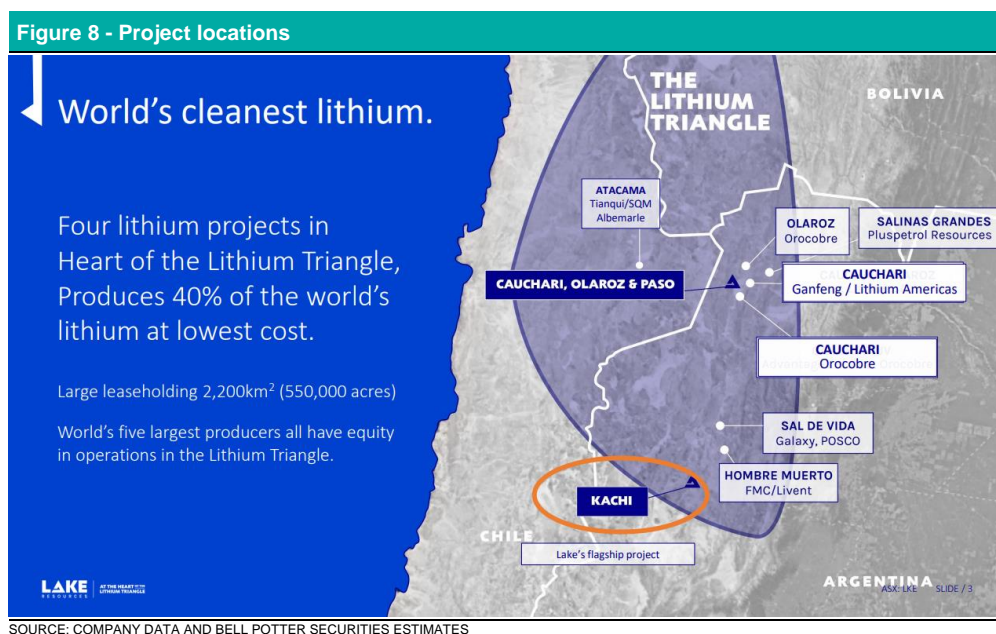
**AUGUST-SEPTEMBER 2021 – ECAS INDICATE 70% DEBT FINANCE**

Long duration, low-cost project debt finance for the Kachi Project indicatively available from the United Kingdom's Export Credit Agency UKEF and Canada's EDC via Expressions of Interest to support approximately 70% of the total finance required for Kachi's development, subject to standard project finance terms.



## Other projects: Argentina focus

LKE's other projects include the Cauchari, Olaroz and Paso lithium brine projects, and the Catamarca lithium pegmatite project. LKE has undertaken minimal drilling and studies on these projects to date. However, the brine projects in particular are contiguous with globally significant lithium operations and have the potential to expand Lake's application of Lilac's direct lithium extraction technology; they cover 47,000 hectares.



### Cauchari (100% LKE) lithium brine project

The Cauchari brine project is located in Jujuy Province in northwest Argentina and is contiguous with Orocobre's 12.7Mt LCE Olaroz and Cauchari Resource, and Ganfeng's 24.6Mt LCE Cauchari-Olaroz Resource.

Drilling by LKE in 2019 demonstrated the high-grade lithium brines from these projects extended into its 100%-owned project area. Higher grade results averaged 493mg/L lithium over 343m, and up to 540mg/L. LKE is aiming to test Lilac's direct lithium extraction technology on the Cauchari brines. The company's aim to then progress scoping level and environmental impact studies. LKE's latest presentations suggest a production target of 25ktpa LCE for Cauchari.

### Olaroz & Paso (100% LKE)

LKE's Olaroz lithium brine project is located 15km northeast of Orocobre's flagship Olaroz lithium production facility. Similar to Cauchari, LKE are planning Resource drilling and scoping study level assessments in 2022.

### Catamarca (100% LKE) pegmatite project

The Catamarca pegmatite project covers 720km<sup>2</sup> in Argentina's Ancasti Ranges. The area has previously hosted small-scale operations with production from lithium bearing spodumene pegmatites. The project covers 9 mining leases and 8 exploration leases. LKE has outlined that it will progress Catamarca after its other projects.

# Board of directors & management

**Table 6 - Board of directors**

Name	Position	Appointed to Position
Steve Promnitz	CEO & Managing Director	November 2016
Stuart Crow	Non-executive Chairman	November 2016
Dr Nicholas Lindsay	Executive Technical Director	July 2017
Dr Robert Trzebski	Non-executive Director	December 2019
Sra Amalia Saenz	Non-executive Director	July 2021

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

## Board of directors' biographies

### Steve Promnitz – CEO & Managing Director

Steve has led Lake since 2016, bringing natural resources and energy experience with a focus on South America and South-East Asia. Previously he was CEO of small/mid-tier companies or senior manager with global resource companies (Rio Tinto, WMC) together with holding senior corporate finance roles with Westpac and Citigroup. He has a Bachelor of Science Honours (Natural Resources) from Monash University and is fluent in Spanish.

### Stuart Crow – Non-executive Chairman

Stuart has global experience in financial services, corporate finance, investor relations, international markets, salary packaging and stock broking. Stuart is passionate about assisting emerging listed companies to attract investors and capital and has owned and operated his own businesses.

### Dr Nicholas Lindsay – Executive Technical Director

Dr Lindsay has over 25 years' experience in Argentina, Chile and Peru in technical and commercial roles in the resources sector with major and mid-tier companies, as well as start-ups. A fluent Spanish speaker, he has successfully taken companies in South America, such as Laguna Resources which he led as Managing Director, from inception to listing, development and subsequent acquisition. He is currently CEO of Manuka Resources Ltd, an unlisted company, having previously held the position of President – Chilean Operations for Kingsgate Consolidated Ltd. Nick is a member of the AusIMM and the AIG and holds a Bachelor of Science (Honours) in Geology, a PhD in Metallurgy and Materials Engineering as well as an MBA.

### Dr Robert Trzebski – Non-executive Director

Dr Trzebski was appointed a Non-Executive Director on 10 December 2019. An international mining executive, he has substantial operational, commercial and technical experience in global mining markets including Argentina. He is currently Chief Operating Officer of Austmine Ltd and holds a degree in Geology, a PhD in Geophysics, a Masters in Project Management and has more than 30 years' professional experience in project management and mining services. Dr Trzebski is a Fellow of the Australian Institute of Mining and Metallurgy and is fluent in Spanish, German and English.

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**Sra Amalia Saenz – Non-executive Director**

Sra. Sáenz is a partner at the law firm, Zang, Bergel & Viñes in Buenos Aires, where she leads the firm's energy and natural resources practice. A leading member of the Association of International Petroleum Negotiators, Sra. Sáenz has extensive experience in energy and resources, including merger and acquisition, financing, joint venture and operating agreements in Argentina. She has also worked in Central Asia and the United Kingdom, gaining experience in exploration and production development across international borders and cultures.

SOURCE: LKE WEBSITE & ASX RELEASES

**Key management****Mr Gautam Parimoo - Chief Operating Officer**

LKE also recently announced the appointment of an experienced engineer, Gautam Parimoo, as Chief Operating Officer. Mr Parimoo will drive the Kachi project from feasibility through construction and commissioning to steady state production. He has successfully executed studies, construction and pre-production/start-up of several large-scale projects in South America. These projects include Collahuasi Phase III expansion (Glencore\_Anglo American\_Mitsui), Mina Justa greenfields construction (Marcobre) and Yanacocha sulphides (Newmont).

# Lake Resources Ltd (LKE)

## Company description

LKE's Kachi (Argentina) lithium brine project has the potential to initially produce 25.5ktpa of high purity lithium carbonate from 2024 using direct lithium extraction technology. A DFS is due by mid-2022. Kachi's direct lithium extraction process is based on ion exchange developed by technology partner Lilac Solutions. Lilac is strategically aligned with LKE through a 25% project earn-in. An April 2020 Kachi PFS (and a subsequent March 2021 update) outlined a 25 year project with a capital cost of US\$544m and unit costs of US\$4,178m. LKE estimate annual project EBITDA of \$260m at the PFS assumed production rate of 25.5ktpa lithium carbonate and price of US\$15,500/t (CIF Asia)

## Investment view: Buy (Speculative), Valuation \$1.37/sh

LKE is leveraged to the dominant market themes: decarbonisation and ESG investing. With an attractive development project, uncommitted product offtake and an independent share register, LKE has strategic appeal. We expect government policy, company strategy and media momentum will continue to focus on decarbonising technologies which are favourable for lithium demand and pricing sentiment. LKE is a project development company with prospective operations and cash flows. Our Speculative risk rating recognises this higher level of risk and volatility of returns.

## Valuation methodology

Our LKE valuation of \$1.37/sh (enterprise value of \$1,679m) is supported by:

- Risked discounted cash flow valuations of Kachi Stage 1 (25.5ktpa lithium carbonate) and Stage 2 (expanding to 51ktpa lithium carbonate);
- Valuations for LKE's earlier stage lithium projects in Argentina;
- Allowances for corporate overheads; and
- Dilution from options on issue.

# Investment risks

Risks include, but are not limited to:

- **Commodity price and exchange rate fluctuations.** The future earnings and valuations of exploration, development and operating resources companies are subject to fluctuations in underlying commodity prices and foreign currency exchange rates.
- **Infrastructure access.** Commodity producers are reliant upon access to transport and energy infrastructure. Access to infrastructure is often subject to contractual agreements, permits, and capacity allocations. Agreements are typically long-term in nature (+10 years). Infrastructure can be subject to outages as a result of weather events or the actions of third party providers.
- **Operating and capital cost fluctuations.** Markets for exploration, project development and processing inputs can fluctuate widely and cause significant differences between planned and actual operating and capital costs. Key operating costs are linked to energy, reagents and labour markets.
- **Resource growth and project life extensions.** Future earnings forecasts and valuations may rely upon Resource and Reserve growth to extend mine lives.
- **Sovereign risks.** Mining companies' assets are subject to the sovereign risks associated with the countries within which they operate.
- **Regulatory changes risks.** Changes to the regulation of infrastructure and taxation (among other things) can impact the earnings and valuation of mining companies.
- **Environmental risks.** Resources companies are exposed to risks associated with environmental degradation as a result of their exploration and development processes.
- **Operating and development risks.** Resources companies' assets are subject to risks associated with their operation and development. Risks for each company can be heightened depending on method of operation (e.g. underground versus open pit mining) or whether it is a single operation company. Development assets can be subject to approvals timelines or weather events, causing delays to commissioning and commercial production.
- **Occupational health and safety risks.** Resources companies are particularly exposed to OH&S risks given the physical nature and human resource intensity of operating assets.
- **Funding and capital management risks.** Funding and capital management risks can include access to debt and equity finance, maintaining covenants on debt finance, managing dividend payments, and managing debt repayments.
- **Merger/acquisition risks.** Risks associated with value transferred during merger and acquisition activity.
- **COVID-19 risks:** Resources companies' rely on freedom of movement of workforces, functioning transport routes, reliable logistics services including road, rail, aviation and ports in order to maintain operations and get their products to market. They also rely on liquid, functioning markets to sell their products. Measures being put in place to combat the COVID-19 pandemic are posing risks to these conditions.

Table 7 - Financial summary

Date		3/11/21					Bell Potter Securities						
Price	A\$/sh	1.01					Stuart Howe (showe@bellpotter.com.au, +61 3 9235 1856)						
Target price	A\$/sh	1.37											
<b>PROFIT AND LOSS</b>							<b>FINANCIAL RATIOS</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e	Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
Revenue	\$m	-	-	-	50	350	<b>VALUATION</b>						
Expenses	\$m	(3)	(4)	(4)	(33)	(126)	EPS (adjusted)	Ac/sh	(0.4)	(0.3)	0.0	(0.4)	6.3
<b>EBITDA</b>	<b>\$m</b>	<b>(3)</b>	<b>(4)</b>	<b>(4)</b>	<b>17</b>	<b>224</b>	EPS growth (Acps)	%	na	na	na	-14078%	na
Depreciation & amortisation	\$m	(0)	-	-	(16)	(59)	PER	x	(286.8)	(387.2)	31,748.0	(227.1)	16.1
EBIT	\$m	(3)	(4)	(4)	2	165	DPS	Ac/sh	-	-	-	-	-
Net interest expense	\$m	-	1	4	(8)	(19)	Franking	%	0%	0%	0%	0%	0%
Profit before tax	\$m	(3)	(3)	0	(7)	146	Yield	%	0%	0%	0%	0%	0%
Tax expense	\$m	-	-	(0)	-	(51)	FCF/share	Ac/sh	(0.9)	(1.1)	(24.8)	(19.1)	9.8
<b>NPAT (reported)</b>	<b>\$m</b>	<b>(3)</b>	<b>(3)</b>	<b>0</b>	<b>(7)</b>	<b>95</b>	FCF yield	%	-1%	-1%	-25%	-19%	10%
<b>NPAT (adjusted)</b>	<b>\$m</b>	<b>(3)</b>	<b>(3)</b>	<b>0</b>	<b>(7)</b>	<b>95</b>	EV/EBITDA	x	-437.9x	-283.7x	-283.7x	66.2x	5.1x
<b>CASH FLOW STATEMENT</b>							<b>LIQUIDITY &amp; LEVERAGE</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e	Net debt / (cash)	\$m	(25.7)	(107.0)	69.8	354.3	183.2
<b>OPERATING CASH FLOW</b>							Net debt / Equity	%	-55%	-77%	22%	116%	43%
Receipts from customers	\$m	-	-	-	50	350	Net debt / Net debt + Equity	%	-121%	-343%	18%	54%	30%
Payments to suppliers and employees	\$m	(2)	(4)	(4)	(33)	(126)	Net debt / EBITDA	x	9.9x	26.7x	-17.4x	20.7x	0.8x
Tax paid	\$m	-	-	(0)	-	(51)	EBITDA / net int expense	x	0.0x	4.4x	1.0x	2.1x	12.1x
Net interest	\$m	-	1	4	(8)	(19)	<b>PROFITABILITY RATIOS</b>						
Other	\$m	-	-	0	-	-	EBITDA margin	%	0%	0%	0%	34%	64%
<b>Operating cash flow</b>	<b>\$m</b>	<b>(2)</b>	<b>(3)</b>	<b>0</b>	<b>9</b>	<b>155</b>	EBIT margin	%	0%	0%	0%	3%	47%
<b>INVESTING CASH FLOW</b>							Return on assets	%	-9%	-3%	0%	-1%	12%
Capex	\$m	(5)	(10)	(351)	(294)	(6)	Return on equity	%	-9%	-3%	0%	-2%	26%
Other	\$m	-	-	-	-	-	<b>ASSUMPTIONS - Prices (nominal)</b>						
<b>Investing cash flow</b>	<b>\$m</b>	<b>(5)</b>	<b>(10)</b>	<b>(351)</b>	<b>(294)</b>	<b>(6)</b>	Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
<b>FINANCING CASH FLOW</b>							Spodumene concentrate (6% basis)	US\$/t	478	1,220	913	850	850
Debt proceeds/(repayments)	\$m	0	-	270	135	-	Lithium Carbonate (battery grade)	US\$/t	8,641	19,220	16,500	15,250	14,500
Dividends paid	\$m	-	-	-	-	-	Lithium Hydroxide (battery grade)	US\$/t	10,510	21,247	18,181	16,750	16,000
Proceeds share issues (net, incl. options)	\$m	33	94	174	-	22	AUD:USD	US\$/A\$	0.75	0.74	0.73	0.73	0.74
Other	\$m	-	-	-	-	-	<b>LCE sales</b>						
<b>Financing cash flow</b>	<b>\$m</b>	<b>33</b>	<b>94</b>	<b>444</b>	<b>135</b>	<b>22</b>	Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
<b>Change in cash</b>	<b>\$m</b>	<b>26</b>	<b>81</b>	<b>93</b>	<b>(150)</b>	<b>171</b>	Kachi (100%)	kt LCE	-	-	-	3	24
Free cash flow	\$m	(7)	(13)	(351)	(285)	149	Kachi (LKE equity share)	kt LCE	-	-	-	2	18
<b>BALANCE SHEET</b>							<b>VALUATION</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e	Shares on issue	m	1,200				
<b>ASSETS</b>							Options	m	157				
Cash	\$m	26	107	200	51	222	Diluted shares on issue	m	1,357				
Receivables	\$m	0	0	0	0	0	<b>Discount rate: 8.0%</b>	<b>100%</b>	<b>100%</b>	<b>LKE</b>	<b>Unrisked</b>	<b>Risk</b>	<b>Riskd</b>
Inventories	\$m	-	-	-	-	-	<b>Projects LKE equity (unrisked)</b>	<b>US\$m</b>	<b>A\$m</b>	<b>equity %</b>	<b>A\$m</b>	<b>discount</b>	<b>A\$m</b>
Capital assets	\$m	22	32	382	660	606	Kachi @ 25.5ktpa LCE	1,000	1,341	75%	1,006	30%	704
Other assets	\$m	0	0	0	0	0	Kachi expansion	1,413	1,903	75%	1,427	40%	856
<b>Total assets</b>	<b>\$m</b>	<b>48</b>	<b>139</b>	<b>583</b>	<b>711</b>	<b>829</b>	<b>Kachi @ 51ktpa LCE</b>	<b>2,413</b>	<b>3,245</b>	<b>75%</b>	<b>2,433</b>		<b>1,561</b>
<b>LIABILITIES</b>							Other projects	150	100%	150			150
Creditors	\$m	1	1	1	1	1	<b>Total projects</b>			<b>5,017</b>			<b>1,711</b>
Borrowings	\$m	-	-	270	405	405	Corporate overheads						(31)
Provisions	\$m	0	0	0	0	0	<b>Enterprise value</b>						<b>1,679</b>
Other liabilities	\$m	-	-	-	-	-	Net debt						(77)
<b>Total liabilities</b>	<b>\$m</b>	<b>1</b>	<b>1</b>	<b>271</b>	<b>406</b>	<b>406</b>	Options						(97)
<b>NET ASSETS</b>	<b>\$m</b>						<b>Equity value (diluted)</b>						<b>1,854</b>
Share capital	\$m	66	160	334	334	356	<b>Equity value (diluted) \$/sh</b>						<b>1.37</b>
Reserves	\$m	3	0	0	(6)	89	Share price \$/sh						1.01
Accumulated losses	\$m	(22)	(22)	(22)	(22)	(22)	Valuation premium to share price						35%
Non-controlling interest	\$m	-	-	-	-	-							
<b>SHAREHOLDER EQUITY</b>	<b>\$m</b>	<b>47</b>	<b>138</b>	<b>312</b>	<b>305</b>	<b>423</b>							
Weighted average shares	m	822	1,182	1,412	1,487	1,514							

SOURCE: BELL POTTER SECURITIES ESTIMATES

**Recommendation structure**

**Buy:** Expect >15% total return on a 12 month view. For stocks regarded as 'Speculative' a return of >30% is expected.

**Hold:** Expect total return between -5% and 15% on a 12 month view

**Sell:** Expect <-5% total return on a 12 month view

*Speculative Investments are either start-up enterprises with nil or only prospective operations or recently commenced operations with only forecast cash flows, or companies that have commenced operations or have been in operation for some time but have only forecast cash flows and/or a stressed balance sheet.*

*Such investments may carry an exceptionally high level of capital risk and volatility of returns.*

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