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# Eye on Lithium

## Price surge continues; LTR signs offtake

### Energy Producers and Developers

Ticker	Price	Mkt Cap (A\$m)
MIN	\$65.12/sh	12,392
PLS	\$3.71/sh	11,074
IGO	\$12.71/sh	9,632
ORE	\$11.20/sh	7,287
LTR	\$1.67/sh	3,746
AVZ	\$0.88/sh	3,184
INR	\$0.79/sh	1,671
CXO	\$0.89/sh	1,507
VUL	\$9.74/sh	1,317
LKE	\$0.97/sh	1,228
SYA	\$0.15/sh	1,058
AGY	\$0.42/sh	533
PLL	\$0.73/sh	406
LPI	\$0.80/sh	267
JRL	\$2.71/sh	151

Source: IRESS

### Bell Potter battery mineral sector coverage

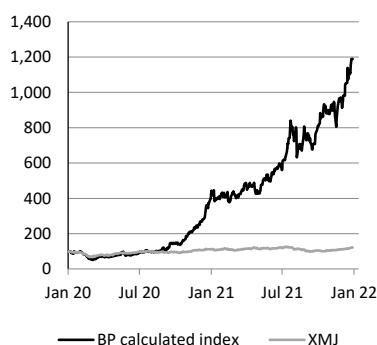
Ticker	Target/ Valuation*	Rating
A4N*	\$0.87/sh	Buy (Spec)
AKE	\$9.30/sh	Hold
LKE*	\$1.37/sh	Buy (Spec)
LTR*	\$2.15/sh	Buy (Spec)

Source: BELL POTTER SECURITIES  
\* valuation for Speculative rated stocks

### Speculative rated securities:

- See risks on Page 17
- May not be suitable for Retail clients.

### BPe lithium sector (ASX) index



SOURCE: IRESS, BLOOMBERG & BELL POTTER SECURITIES CALCULATIONS  
NOTE: \* INDEX OF COMBINED DAILY MARKET CAPITALISATIONS OF SELECTED ASX LISTED LITHIUM FOCUSED COMPANIES (PLS, ORE, LTR, VUL, INR, SYA, AVZ, LKE, CXO, PLL AND AGY).

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AFSL 243480

## Lithium commodity prices hit fresh records

Lithium prices surged in 2021, with quoted Asia delivered references for lithium carbonate up 433%, lithium hydroxide up 276% and spodumene concentrate up 482% (Fastmarkets). Price momentum has continued into 2022, as outlined in Table 1. News reports have cited demand from lithium iron phosphate (LFP) battery production, restocking ahead of the Chinese New Year holiday, and potential for Chinese production cuts during the Beijing Winter Olympics as key reasons for recent market strength. This report includes valuation sensitivity analysis across the lithium stocks under our coverage, illustrating potential upside under more bullish price outlooks.

## LTR secures landmark offtake with LG Energy Solution

Last week, LTR announced signing of a binding offtake term sheet with LG Energy Solution (LGES), a premier global lithium-ion battery manufacturer. The initial five-year term (with extension) will cover 150ktpa spodumene from LTR's Kathleen Valley project (around 30% of production) starting in 2024, with prices linked to indices for lithium hydroxide. We view the project validation from a high quality counterparty and preservation of LTR's value leverage to lithium spot prices, among other benefits, as key value drivers from this agreement (see [research](#)). Separately, last week LGES' US\$10.8b IPO was reportedly over 2,000 times covered and will be the South Korea's largest ever offering; it will be the country's third most valuable company.

## More M&A activity: Rio Tinto expands lithium exposure

Lithium sector corporate activity continued into late 2021, recent transactions being:

- **Rio Tinto (RIO, not rated)** entered a binding agreement with **Rincon Mining (Rincon, controlled by private equity group Sentient Equity Partners)** to acquire the Rincon brine project in Argentina for US\$825m cash. Scoping studies have outlined a potential 50ktpa lithium carbonate operation using direct lithium extraction from 2025. Rincon has a 2.0Mt LCE Reserve (40 year project life) and 11.8Mt LCE Resource. The acquisition adds to RIO's existing lithium exposure, the large Jadar project in Serbia.
- **Zhejiang Huayou Cobalt Co. (Huayou, SHA:603799, not rated)** are to acquire **Prospect Resources' (ASX:PSC, not rated)** 87% interest in the Arcadia hard rock lithium project in Zimbabwe for US\$378m cash. Studies have assessed a 147ktpa spodumene concentrate and 118ktpa petalite concentrate (a lithium bearing mineral) operation. The project Resource is 1.9Mt LCE and is expected to support an 18 year mine life. First product is expect from late 2023.

A comprehensive list of lithium M&A can be found on pages 4-7 of this report.

**Table 1 - Lithium commodity prices (Fastmarkets)**

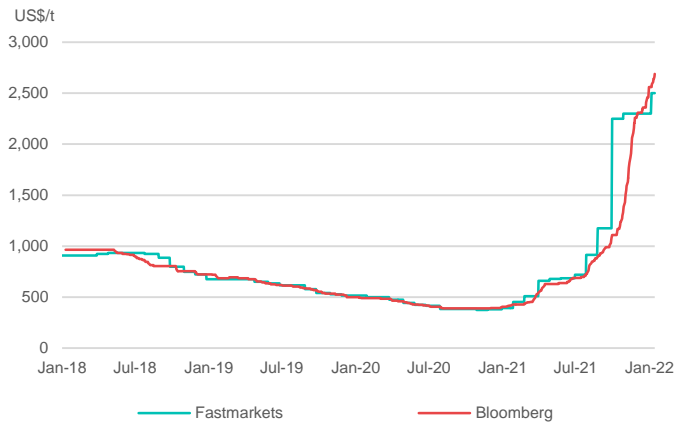
Lithium commodity	Last price US\$/t	Change			
		1 month	3 months	1 year	2 years
Spodumene min 6% Li2O, CIF China	2,500	9%	11%	533%	385%
Lithium carbonate, CIF NE Asia	43,500	36%	93%	544%	397%
Lithium hydroxide, CIF NE Asia	37,000	19%	54%	311%	261%

SOURCE: FAST MARKETS TICKERS MB-LI-0012 (SPODUMENE); MB-LI-0029 (BATTERY GRADE CARBONATE); MB-LI-0033 (BATTERY GRADE HYDROXIDE)

**DISCLAIMER:** THIS REPORT MUST BE READ WITH THE DISCLAIMER ON PAGE 18 THAT FORMS PART OF IT.

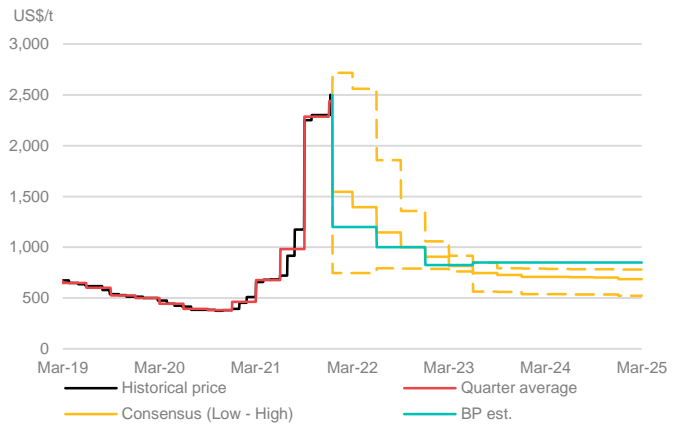
# Lithium commodity price charts & outlook

**Figure 1 - Spodumene price (min. 5-6%), CIF China**



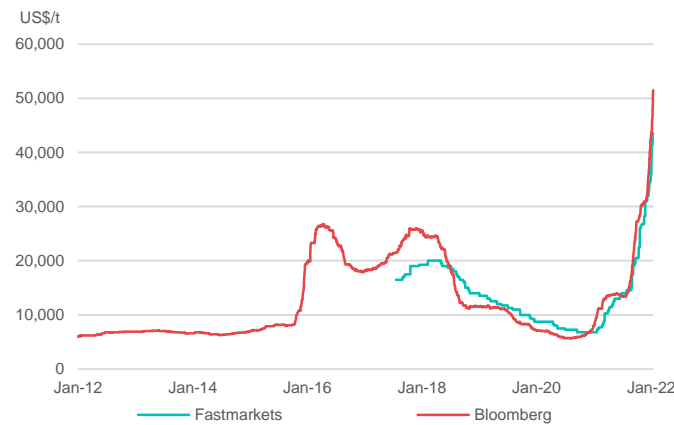
SOURCE: FAST MARKETS & BLOOMBERG (LICNSPDU INDEX)

**Figure 2 - Historical and expected spodumene price, CIF China**



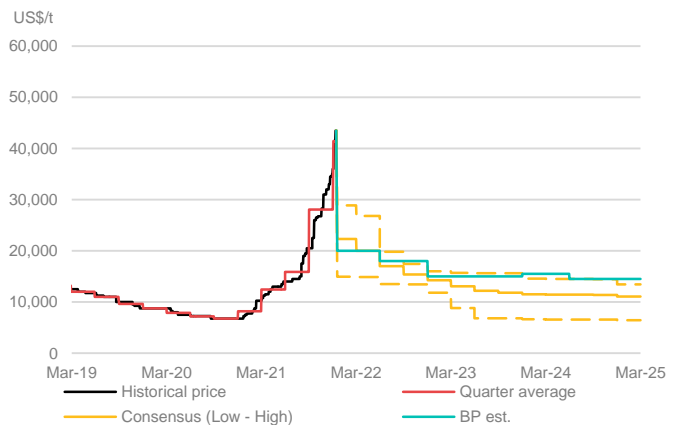
SOURCE: FAST MARKETS & CONSENSUS ECONOMICS

**Figure 3 - Lithium carbonate price (battery grade), CIF NE Asia**



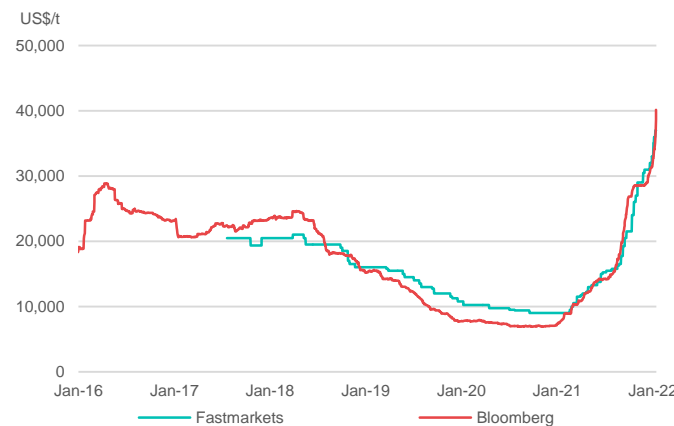
SOURCE: FAST MARKETS & BLOOMBERG (L4CNMJGO AMTL INDEX)

**Figure 4 - Historical and expected Li carbonate price, CIF NE Asia**



SOURCE: FAST MARKETS & CONSENSUS ECONOMICS

**Figure 5 - Lithium hydroxide price (battery grade), CIF NE Asia**



SOURCE: FAST MARKETS & BLOOMBERG (L6CNVRAT AMTL INDEX)

**Figure 6 - Historical and expected Li hydroxide price, CIF NE Asia**



SOURCE: FAST MARKETS & CONSENSUS ECONOMICS

# Scenario analysis: Flexing long run prices

We have run the following long run price scenarios across our lithium coverage (all else equal) to illustrate the potential upside to our base case valuations. All price quotations referenced in the table below are on an Asia delivered basis and in real terms. Downstream asset valuations have been held constant in the analysis.

**Table 2 - Lithium price scenarios**

Lithium commodity	Base case	Scenario 1	Scenario 2 "Spot"
6% Li <sub>2</sub> O spodumene concentrate US\$/t	850	1,500	2,500
Battery grade lithium carbonate US\$/t	14,500	25,000	43,500
Battery grade lithium hydroxide US\$/t	16,000	27,000	37,000

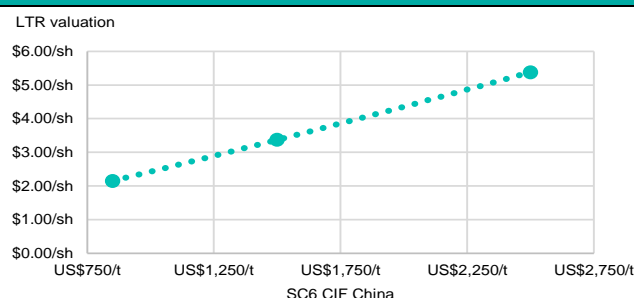
SOURCE: BELL POTTER SECURITIES ESTIMATES

**Table 3 - LTR valuation sensitivity to SC6 prices**

	Base case	Scenario 1	Scenario 2
SC6 reference price CIF	US\$850/t	US\$1,500/t	US\$2,500/t
Kathleen Valley (100%, risked) A\$m	3,963	6,648	11,072
Other A\$m	288	288	288
<b>EV (risked) A\$m</b>	<b>\$4,250m</b>	<b>\$6,936m</b>	<b>\$11,360m</b>
Diluted net debt/(cash) A\$m	-478	-478	-478
<b>Equity value (diluted) A\$m</b>	<b>\$4,728m</b>	<b>\$7,414m</b>	<b>\$11,838m</b>
Diluted shares on issue m	2,204		
<b>Equity value (diluted) \$/sh</b>	<b>\$2.15/sh</b>	<b>\$3.37/sh</b>	<b>\$5.38/sh</b>

SOURCE: BELL POTTER SECURITIES ESTIMATES

**Figure 7 - LTR asset valuation sensitivity to SC6 prices**



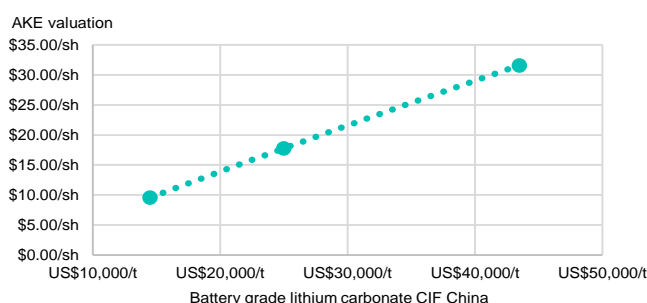
SOURCE: BELL POTTER SECURITIES ESTIMATES

**Table 4 - AKE valuation sensitivity to LC, LH & SC6 prices\***

	Base case	Scenario 1	Scenario 2
Lithium carbonate reference price CIF	US\$14,500/t	US\$25,000/t	US\$43,500/t
Lithium assets A\$m	5,644	10,418	18,447
Other A\$m	473	951	1,754
<b>EV (risked) A\$m</b>	<b>\$6,118m</b>	<b>\$11,368m</b>	<b>\$20,200m</b>
Diluted net debt/(cash) A\$m	-3	-3	-3
<b>Equity value (diluted) A\$m</b>	<b>\$6,121m</b>	<b>\$11,372m</b>	<b>\$20,203m</b>
Diluted shares on issue m	640		
<b>Equity value (diluted) \$/sh</b>	<b>\$9.57/sh</b>	<b>\$17.78/sh</b>	<b>\$31.59/sh</b>

SOURCE: BELL POTTER SECURITIES ESTIMATES \* LC - LITHIUM CARBONATE; LH - LITHIUM HYDROXIDE

**Figure 8 - AKE asset valuation sensitivity to LC, LH & SC6 prices\***



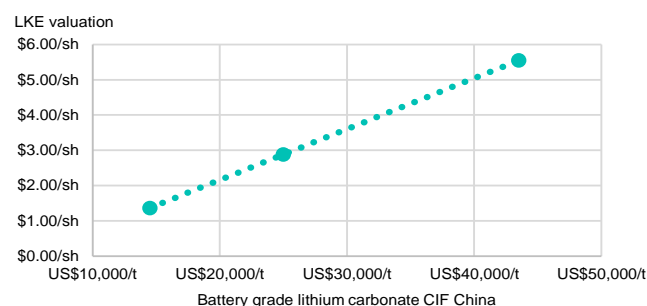
SOURCE: BELL POTTER SECURITIES ESTIMATES \* LC - LITHIUM CARBONATE; LH - LITHIUM HYDROXIDE

**Table 5 - LKE valuation sensitivity to lithium carbonate prices**

	Base case	Scenario 1	Scenario 2
Lithium carbonate reference price CIF	US\$14,500/t	US\$25,000/t	US\$43,500/t
Kachi @ 51ktpa LCE (75%, risked) A\$m	1,561	3,616	7,237
Other A\$m	119	119	119
<b>EV (risked) A\$m</b>	<b>\$1,679m</b>	<b>\$3,735m</b>	<b>\$7,356m</b>
Diluted net debt/(cash) A\$m	-174	-174	-174
<b>Equity value (diluted) A\$m</b>	<b>\$1,854m</b>	<b>\$3,909m</b>	<b>\$7,530m</b>
Diluted shares on issue m	1,357		
<b>Equity value (diluted) \$/sh</b>	<b>\$1.37/sh</b>	<b>\$2.88/sh</b>	<b>\$5.55/sh</b>

SOURCE: BELL POTTER SECURITIES ESTIMATES

**Figure 9 - LKE valuation sensitivity to LC prices\***



SOURCE: BELL POTTER SECURITIES ESTIMATES \* LC - LITHIUM CARBONATE

# Lithium sector M&A transactions

## Lithium M&A transaction comps and summaries

Table 6 - Lithium sector M&A transaction comps

Target / Acquirer	Date announced	Interest %	Deal value to Reserve	Deal value to Resource	Deal value to expected production
			A\$/t LCE	A\$/t LCE	A'000\$/t LCE
Galaxy Resources' Salar del Hombre Muerto tenements / POSCO (KRX:005490)	May-18	100	na	147	na
LSC Lithium Corporation (delisted) / Pluspetrol S.A (private)	Jan-19	100	na	33	6
Desert Lion Energy Inc (delisted) / Lepidico Ltd (ASX:LPD)	May-19	100	na	120	na
Kidman Resources (delisted) / Wesfarmers (ASX:WES)	May-19	100	444	221	39
Wodgina Hard Rock Lithium Mine (ASX:MIN) / Albemarle (NYSE:ALB)	Aug-19	60	725	425	29
Advantage Lithium (delisted) / Orocobre (ASX:ORE)	Feb-20	65	na	8	na
Altura Lithium Operations (delisted) / Pilbara Minerals (ASX:PLS)	Dec-20	100	267	224	9
Tianqi Lithium Energy Australia (SHE:002466) / IGO (ASX:IGO)	Dec-20	25	1,075	829	32
Sayona Mining (ASX:SYA) / Piedmont Lithium (ASX:PLL)	Jan-21	20	90	51	2
Sayona Quebec, a subsidiary of Sayona Mining (ASX:SYA) / Piedmont Lithium (ASX:PLL)	Jan-21	25	86	50	2
Sonora Lithium Project (AIM:BCN) / Ganfeng Lithium (CH:002460)	Feb-21	28	32	16	8
Bacanora Lithium (AIM:BCN) / Ganfeng Lithium (CH:002460)	May-21	71	198	102	41
Galaxy Resources (delisted) / Orocobre (ASX:ORE)	Apr-21	100	1,764	332	29
Goulamina Lithium Project (ASX:FFX) / Ganfeng Lithium (CH:002460)	Jun-21	50	181	90	5
North American Lithium / Sayona Québec (ASX:SYA & PLL)	Jun-21	100	215	69	3
Core Lithium (ASX:CXO) / Ganfeng Lithium (CH:002460)	Aug-21	6	2,306	1,167	22
Rhyolite Ridge Project (ASX:INR) / Sibanye-Stillwater (JSE:SSW)	Sep-21	50	2,316	1,075	69
Kachi Lithium Brine Project (ASX:LKE) / Lilac Solutions (private)	Sep-21	25	na	na	na
Manono Lithium and Tin Project (ASX:AVZ) / Suzhou CATH Energy Technologies (private)	Sep-21	24	258	84	13
Moblan Project (Guo Ao Lithium, private) / Sayona Mining (ASX:SYA)	Sep-21	60	na	363	na
Neo Lithium (TSX:NLC) / Zijin Mining Group (HK:2899)	Oct-21	100	775	133	50
ioneer (ASX:INR) / Sibanye-Stillwater (JSE:SSW)	Oct-21	7	2,317	1,075	69
Global Lithium Resources (ASX:GL1) / Yibin Tianyi (private)	Nov-21	10	na	241	na
Millennial Lithium (TSX:ML) / Lithium Americas (TSX:LAC)	Nov-21	100	532	102	21
Standard Lithium (TSX:SLI) / Koch Investments Group (private)	Nov-21	8	na	1,388	63
Rincon Mining (private) / Rio Tinto (ASX:RIO)	Dec-21	100	97	580	23
Arcadia Lithium Project (ASX:PSC) / Zhejiang Huayou Cobalt (SHA:603799)	Dec-21	87	316	483	16

SOURCE: COMPANY DATA

### DECEMBER 2021

- Zhejiang Huayou Cobalt Co., Limited (Huayou, SHA:603799, not rated)**, executed a binding agreement with **Prospect Resources (ASX:PSC, not rated)** for the sale of PSC's 87% interest in the Arcadia Lithium Project for US\$377.8m cash consideration. The project is located in Zimbabwe, Africa and project partners include the Tamari Trust (7%) and Kingston Kajese (6%). The deal is conditional on a Chinese and Zimbabwean regulatory approvals as well as PSC shareholder approval. A December 2021 Optimised Feasibility Study evaluated an 18 year hard rock operation producing 147ktpa of spodumene concentrate and 118ktpa of petalite concentrate from a 1.9Mt LCE Resource (all figures are gross). Construction is expected to commence in mid-2022 for first product potentially from late 2023.
- Rio Tinto (ASX:RIO, not rated)** has entered into a binding agreement with **Rincon Mining (Rincon, controlled by private equity group Sentient Equity Partners)** to acquire the Rincon lithium brine project for US\$825m cash consideration. Rincon is located in Argentina's Salta Province, within the South American "lithium triangle". Scoping studies for Rincon supported 50ktpa lithium carbonate production from a 2.0Mt LCE Reserve and 11.8Mt LCE Resource, i.e. a 40 year project life. A prefeasibility

study on Rincon is due late 2021, with first production potentially from 2025. Rincon expects to employ direct lithium extraction technology (not evaporation ponds).

#### NOVEMBER 2021

- **Millennial Lithium Corp. (TSX:ML, not rated)** entered into a definitive arrangement agreement with Lithium Americas Corp. (TSX:LAC, not rated) to which LAC will acquire all outstanding ML shares for C\$4.70/sh, payable in LAC shares and a C\$0.001 cash payment per ML share. ML owns 100% of the Pastos Grandes lithium brine project in Argentina which contains a Mineral Resource of 4.9Mt LCE. A DFS has been completed, evaluating a potential development capable of producing 24ktpa of battery grade lithium carbonate. The binding deal follows an all-cash offer by **Contemporary Amperex Technology Co (CATL, SHE:300750, not rated)** in September 2021 for all outstanding ML shares for C\$3.85/sh (C\$377m) and **Ganfeng Lithium Co (CH:002460, not rated, Ganfeng)** in July 2021 for C\$3.60/sh (C\$353m).
- **Yibin Tianyi**, part-owned by CATL, to invest A\$6.2m for 16.7m shares (9.9% interest) in **Global Lithium Resources (ASX:GL1, not rated)**. GL1 owns 100% of the prospective Marble Bar Lithium Project located in Western Australia's Pilbara region. The project currently hosts a Mineral Resource of 10.5Mt, grading 1.0% (0.26Mt LCE), entirely in the inferred category. GL1 is currently progressing exploration works at its tenements. A Potential Mineral Resource update is expected from early 2022.

#### OCTOBER 2021

- **Zijin Mining Group's (HK:2899, not rated)** US\$770m friendly takeover of **Neo Lithium Corp (TSX:NLC, not rated)**. NLC owns 100% of the Tres Quebradas lithium brine project in Catamarca Province, Argentina. Tres Quebradas has a Mineral Resource of 9.4Mt LCE and a definitive feasibility study is due by the end of 2021.
- **Sayona Mining (ASX:SYA, not rated)** acquired a 60% interest in the Moblan hard rock lithium project from **Guo Ao Lithium (private)** for US\$86.5m. The project is located in the James Bay Area of Quebec, Canada and hosts a Mineral Resource of 16.1Mt, grading 1.38% Li<sub>2</sub>O (approximately 0.6Mt LCE). SYA and 40% partner, SOQUEM Inc, are progressing a revised DFS to assess increased production capacity.

#### SEPTEMBER 2021

- **Lilac Solutions (private)** entered into an agreement with **Lake Resources (ASX:LKE, Buy (Spec), Val\$1.37/sh)** to earn-in up to a 25% interest in the Kachi (Mineral Resource 4.4Mt LCE) lithium brine project in Catamarca Province, Argentina subject to performance milestones. Once the earn-in is complete, Lilac will contribute US\$50m (A\$69m) towards its share of project funding. Lilac is LKE's technology partner in this direct lithium extraction/ion exchange project currently progressing through a definitive feasibility study. Lilac has subsequently raised US\$150m in Series B financing.
- **Suzhou CATH Energy Technologies (CATH)**, a private entity partly owned by CATL, entered into an agreement with **AVZ Minerals (ASX:AVZ, not rated)** to earn a 24% equity interest in the hard rock Manono Lithium and Tin Project. CATH are to pay US\$240m for their 24% interest and a further US\$160m (subject to final project development costs being verified) for its share of project development costs. The Democratic Republic of Congo Government is a 25% project partner. An updated DFS was initiated in the September 2021 quarter to assess greater production capacity. The project has a Mineral Resource of 401Mt, grading 1.65% (16.4Mt LCE).
- **Sibanye-Stillwater (JSE:SSW, not rated)** will contribute US\$490m into a 50:50 joint venture with **ioneer (ASX:INR, not rated)** that will progress the Rhyolite Ridge project's southern land holdings (located in Nevada, US). Upon contribution of a further US\$50m in funding by SSW, INR will contribute its 100% owned northern project

position to the joint venture. The project has a Mineral Resource of 1.25Mt LCE and is outstanding final project approvals before construction can commence.

#### AUGUST 2021

- **Ganfeng** to make an A\$34m equity investment in **Core Lithium (ASX:CXO, not rated)**. The equity investment will be priced at A\$0.338/sh, (representing a 10% premium to the 10-day volume weighted average price up to 6 August 2021). CXO's 100% owned Finniss hard rock lithium project in the Northern Territory has a Mineral Resource of 14.7Mt, grading 1.32% (0.5Mt LCE), and is construction-ready.
- **Sayona Québec**, a subsidiary 75% owned by SYA and 25% **Piedmont Lithium (ASX:PLL, not rated)**, acquired **North American Lithium (NAL)** through a bid process with court-appointed administrators for around C\$94m (A\$103m). NAL is a hard rock lithium project, located in Quebec, Canada and has a Mineral Resource of 57.7Mt, grading 1.05% (approximately 1.5Mt LCE). Studies are underway to assess a resumption of spodumene production and potential downstream capabilities.
- **Galaxy Resources (ASX:GXY)** merged with **Orocobre (ASX:ORE, Hold, TP\$9.30)**. The combined entity (to be rebranded to Allkem) is capable of producing 40ktpa LCE from FY22. GXY owned 100% its assets: the operating Mt Cattlin hard rock mine in Western Australia; Sal de Vida brine project (under construction) Argentina; and James Bay hard rock project (PFS underway) in Canada. GXY's Resource was 8.0Mt LCE.
- **Firefinch (ASX:FFX, not rated)** and **Ganfeng** entered into a binding term sheet to develop the Goulamina hard rock project (located in Mali, Africa) under a joint venture structure. Ganfeng will contribute US\$130m to the 50:50 joint venture and provide FFX with US\$64m in debt funding. The project has a Resource of 109Mt, grading 1.45% Li<sub>2</sub>O (3.9Mt LCE) and an updated DFS is due in the December 2021 quarter.
- **IGO (ASX:IGO, Buy, TP\$5.35)** acquired non-controlling interests in the Greenbushes hard rock lithium mine (25% effective interest) and Kwinana Lithium Hydroxide Refinery (50%) from **Tianqi Lithium (CH:002466, not rated, Tianqi)** for US\$1.4b. Both assets are located in Western Australia and Albemarle Corp. (NYSE:ALB, not rated) is a partner (indirect 49% interest) in the Greenbushes mine. The mine has a Mineral Resource of 196.8Mt, grading 1.93% (9.4Mt LCE, including tailings, 100% basis) and is currently producing 1.2Mtpa of lithium concentrate. The refinery's first train has been commissioned in 2021 and will produce 24Mtpa of lithium hydroxide in steady state.

#### MAY 2021

- **Bacanora Lithium PLC (AIM:BCN, not rated)** and **Ganfeng** entered into an agreement regarding the terms of a possible cash offer by Ganfeng for £0.675/sh (A\$1.21/sh) for shares that Ganfeng do not already own (28.9% ownership at the time), implying a total value for BCN of £259m. BCN owns 50% of the Sonora clay lithium project in Sonora, Mexico which has a Mineral Resource of 8.8Mt LCE. Ganfeng is a 50% partner in the project. A feasibility study has been completed on the project.

#### FEBRUARY 2021

- **Ganfeng** increased its stake in the joint venture holding the **Sonora Lithium Project** from 22.5% to 50% for £21.9m (see above for details of the project).

#### JANUARY 2021

- **PLL** made direct equity investments in **SYA** (19.9%) and its 100% owned **Sanoya Quebec Inc.** subsidiary (25%). Total consideration for the company-level investment was US\$7m including the purchase of two unsecured convertible bonds (to be later converted); PLL paid US\$5m for the subsidiary investment. A binding supply agreement for at least 50% of Sayona Quebec's planned spodumene concentrate

production was also part of the deal. At the time of the deal, assets held by Sayona Quebec included: the DFS-level hard rock Authier project and the prospective hard rock Tansim project. Resources for these assets total 20.1Mt, grading 1.01% (0.5Mt LCE).

- **Pilbara Minerals (ASX:PLS, not rated)** acquired **Altura Mining's (formerly AJM)** hard rock lithium operations in the Pilbara, Western Australia for a total consideration of US\$175m. At the time of the acquisition, the development (now known as Ngungaju Plant and South Pit area) had a Mineral Resource of 45.7Mt, grading 1.06% (1.2Mt LCE). The mine had been put on care and maintenance after AJM went into receivership.

# Lithium company catalysts & news flow

## By mid-2022:

- **Allkem (AKE):** Commissioning of Naraha hydroxide lithium plant. Progressing James Bay Environmental and Social Impact Assessment and regulatory approvals. Procurement of long-lead capital equipment. Targeting James Bay FID in Q2 2022. Construction updates on Sal De Vida Stage 1.
- **Lake Resources (LKE):** Updated Mineral Resource and initial Mineral Reserve for the Kachi project. Completion of Kachi DFS and Environmental and Social Impact Assessment (EISA).
- **Mineral Resources (MIN):** News flow relating to the restart of operations at MIN's 40% owned Wodgina mine, initially focussing one processing line (250ktpa). The potential restart of a further two 250ktpa processing lines may be announced, subject to sufficient market demand. All Wodgina spodumene will be converted into lithium hydroxide; MIN's 40% owned Kemerton Hydroxide Plant commissions through 2022.
- **Liontown Resources (LTR):** Announcement of further offtake agreements to the foundational binding offtake term sheet signed with LG Energy Solution in January 2022. Also expect procurement announcements of long-lead capital items and awarding of EPCM and key supplier and engineering contracts for the Kathleen Valley development. Completion of project funding, permitting and FID is expected by Q2 2022.

## Ongoing:

- **Allkem (AKE):** Construction completion and commencement of production at the Olaroz Stage 2 development in H2 2022. James Bay construction expected to commence in Q3 CY22.
- **IGO (IGO):** Continued ramp-up of lithium hydroxide production to nameplate capacity at the Kwinana Lithium Hydroxide Refinery. Expect news flow regarding completion and commissioning of the refinery's second train. Completion and commissioning of the Tailings Retreatment Plant and Chemical Grade Plant at the Greenbushes mine, adding 280ktpa and 520ktpa of gross annual spodumene production capacity, respectively.
- **Lake Resources (LKE):** Further expressions of interest and more developed agreements with Export Credit Agencies and other potential debt financiers with respect to Kachi capital cost financing. Announcement of product offtake agreements. Kachi project FID expected in mid-2022, construction in late 2022 and production in 2024.
- **Liontown Resources (LTR):** Continued assessment of downstream processing optionality. Construction of Kathleen Valley to commence in Q4 2022 and is expected to be completed by Q4 2023. Commissioning will then commence in Q1 2024 and full production by Q2 2024.



# Allkem Limited (AKE)

AKE owns and operates a diversified portfolio of lithium producing assets, including:

- Brine projects:
  1. **Olaroz** (Producing, 66.5% AKE, Jujuy province, Argentina): Producing since April 2015. A Stage 2 expansion at Olaroz will lift lithium carbonate capacity from current levels of 17.5ktpa to 42.5ktpa from early 2022. Subsequent expansions could further lift capacity at Olaroz.
  2. **Sal de Vida** (Under development, 100% AKE, Catamarca province, Argentina): Being developed in three 10.7ktpa lithium carbonate stages, the first of which will be commissioned in late 2022. ORE currently expect subsequent 10.7ktpa expansions to be commissioned in 2025 and 2027.
- Hard rock / spodumene concentrate projects:
  1. **Mt Cattlin** (Producing, 100% AKE, Ravensthorpe, Western Australia): Capacity of around 200ktpa of 5.6-5.8% Li<sub>2</sub>O spodumene concentrate (28ktpa LCE) and mine life to 2025.
  2. **James Bay** (Prefeasibility study underway, 100% AKE, Québec, Canada): Potential production of 330ktpa of 5.6% Li<sub>2</sub>O spodumene concentrate (46ktpa LCE) over an 18 year project life.
- Downstream project:
  1. **Naraha** (Under development, 75% AKE, Naraha, Japan): Lithium carbonate to lithium hydroxide conversion facility with planned annual production of 10ktpa commissioning from early 2022.

## Investment thesis: Hold, Target Price \$9.30/sh

AKE is a go-to stock for multi-project exposure to lithium markets and the decarbonisation theme in general. A tight supply outlook has resulted in lithium prices lifting to record highs. AKE is in a strong position to negotiate much higher prices for 2022, driving material operating cash flow growth. 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. ORE's rebranding to Allkem has signalled a strong ESG focus and culture.

**Table 7 - AKE financial summary**

Date		17/01/22					Bell Potter Securities						
Price	A\$/sh	11.43					Stuart Howe (showe@bellpotter.com.au, +61 3 9235 1856)						
Target price	A\$/sh	9.30					Joseph House (jhouse@bellpotter.com.au, +61 3 9235 1624)						
<b>PROFIT AND LOSS</b>							<b>FINANCIAL RATIOS</b>						
Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e	Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e
Revenue	\$USm	77	85	382	589	828	<b>VALUATION</b>						
Expenses	\$USm	(112)	(66)	(212)	(318)	(388)	EPS	Ac/sh	(29)	(24)	19	26	46
<b>EBITDA</b>	<b>\$USm</b>	<b>(35)</b>	<b>19</b>	<b>171</b>	<b>271</b>	<b>440</b>	EPS growth (Acps)	%	-200%	na	na	41%	77%
Depreciation, amortisation & impairments	\$USm	(29)	(20)	(21)	(32)	(43)	PER	x	-39.1x	-47.4x	61.8x	43.8x	24.7x
<b>EBIT</b>	<b>\$USm</b>	<b>(64)</b>	<b>(0)</b>	<b>149</b>	<b>239</b>	<b>397</b>	DPS	Ac/sh	-	-	-	-	-
Net interest expense	\$USm	(13)	(21)	(12)	(11)	(7)	Franking	%	0.0%	0.0%	0.0%	0.0%	0.0%
Profit before tax	\$USm	(77)	(22)	138	228	389	Yield	%	0.0%	0.0%	0.0%	0.0%	0.0%
Tax expense	\$USm	10	(68)	(46)	(68)	(110)	FCF/share	Ac/sh	(83)	(45)	(36)	14	19
Significant items	\$USm	-	-	-	-	-	FCF yield	%	-7.3%	-3.9%	-3.1%	1.3%	1.7%
<b>NPAT reported</b>	<b>\$USm</b>	<b>(67)</b>	<b>(89)</b>	<b>92</b>	<b>161</b>	<b>279</b>	EV/EBITDA	x	-142.9x	261.2x	29.5x	18.6x	11.4x
Non-controlling interests	\$USm	(15)	(30)	15	39	63	<b>LIQUIDITY &amp; LEVERAGE</b>						
<b>NPAT to owners</b>	<b>\$USm</b>	<b>(52)</b>	<b>(60)</b>	<b>77</b>	<b>121</b>	<b>215</b>	Net debt / (cash)	\$m	79	78	49	(17)	(105)
							Net debt / Equity	%	14%	12%	2%	-1%	-4%
							Net debt / Net debt + Equity	%	13%	10%	2%	-1%	-4%
							Net debt / EBITDA	x	-2.3x	4.1x	0.3x	-0.1x	-0.2x
							EBITDA / net int expense	x	2.7x	-0.9x	-14.8x	-25.6x	-59.0x
<b>CASH FLOW STATEMENT</b>							<b>PROFITABILITY RATIOS</b>						
Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e	EBITDA margin	%	-46%	23%	45%	46%	53%
<b>OPERATING CASH FLOW</b>							EBIT margin	%	-83%	0%	39%	41%	48%
Receipts from customers	\$USm	81	89	345	553	802	Return on assets	%	-6%	-7%	3%	4%	7%
Payments to suppliers and employees	\$USm	(91)	(94)	(219)	(280)	(367)	Return on equity	%	-9%	-13%	5%	5%	9%
Tax paid	\$USm	-	-	(46)	(68)	(110)							
Net interest	\$USm	(7)	(10)	(12)	(11)	(7)							
Other	\$USm	-	-	(14)	(14)	(14)							
<b>Operating cash flow</b>	<b>\$USm</b>	<b>(16)</b>	<b>(16)</b>	<b>55</b>	<b>181</b>	<b>303</b>							
<b>INVESTING CASH FLOW</b>							<b>ASSUMPTIONS - Prices (nominal)</b>						
Capex	\$USm	(127)	(97)	(203)	(114)	(215)	Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e
Disposal of assets	\$USm	1	2	-	-	-	Spodumene (min. 5-6% Li <sub>2</sub> O)	US\$/t	519	478	1,220	913	850
Other	\$USm	(6)	(0)	-	-	-	Lithium carbonate price - Battery grade	US\$/t	9,311	8,641	19,220	16,500	15,250
<b>Investing cash flow</b>	<b>\$USm</b>	<b>(131)</b>	<b>(94)</b>	<b>(203)</b>	<b>(114)</b>	<b>(215)</b>	Lithium hydroxide price - Battery grade	US\$/t	11,236	10,510	21,247	18,181	16,750
<b>FINANCING CASH FLOW</b>							FX	US\$/A\$	0.67	0.75	0.74	0.73	0.73
Debt proceeds/(repayments)	\$USm	98	114	-	-	-	<b>ASSUMPTIONS - Equity sales</b>						
Dividends paid	\$USm	-	-	-	-	-	Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e
Proceeds from share issues (net)	\$USm	0	119	-	-	-	Mt Cattlin	kt	147	171	225	188	169
Other	\$USm	(59)	(34)	-	-	-	James Bay	kt	-	-	-	-	-
<b>Financing cash flow</b>	<b>\$USm</b>	<b>39</b>	<b>199</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>Total spodumene</b>	<b>kt</b>	<b>147</b>	<b>171</b>	<b>225</b>	<b>188</b>	<b>169</b>
<b>Change in cash</b>	<b>\$USm</b>	<b>(109)</b>	<b>89</b>	<b>(147)</b>	<b>67</b>	<b>88</b>	<b>Total spodumene sales LCE (equity)</b>	<b>kt</b>	<b>22</b>	<b>24</b>	<b>32</b>	<b>27</b>	<b>24</b>
Free cash flow	\$USm	(148)	(110)	(147)	67	88	Olaroz	kt	7	9	7	16	25
							Sal de Vida	kt	-	-	-	4	10
							<b>Total brine sales LCE (equity)</b>	<b>kt</b>	<b>7</b>	<b>9</b>	<b>7</b>	<b>20</b>	<b>36</b>
							<b>Total sales LCE (equity)</b>	<b>kt</b>	<b>29</b>	<b>33</b>	<b>39</b>	<b>46</b>	<b>60</b>
							Naraha lithium hydroxide	kt	-	-	1	4	7
							<b>Naraha LIOH sales LCE (equity)</b>	<b>kt</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>4</b>	<b>6</b>
<b>BALANCE SHEET</b>							<b>VALUATION</b>						
Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e	Shares on issue	m	638 Used for valuation purposes				
<b>ASSETS</b>							Options & rights	m	2 Options and performance rights				
Cash	\$USm	172	258	303	370	458	Diluted shares	m	640				
Receivables	\$USm	16	23	63	98	124	<b>NPV (Discount rate 8%)</b>	<b>Current</b>		<b>+12 mths</b>		<b>+24 mths</b>	
Inventories	\$USm	72	94	114	114	114	US\$m	US\$/sh	US\$m	US\$/sh	US\$m	US\$/sh	
Capital assets	\$USm	807	897	3,362	3,445	3,617	Olaroz (Stage 1 & 2) (ORE 66.5%)	1,488	2.33	1,627	2.55	1,668	2.62
Right of use	\$USm	27	28	28	28	28	Sal de Vida (ORE 100.0%)	1,472	2.31	1,717	2.69	1,846	2.90
Other assets	\$USm	51	48	71	71	71	Mt Cattlin (ORE 100.0%)	186	0.29	123	0.19	97	0.15
<b>Total assets</b>	<b>\$USm</b>	<b>1,146</b>	<b>1,349</b>	<b>3,942</b>	<b>4,127</b>	<b>4,412</b>	Naraha (ORE 75.0%)	252	0.40	289	0.45	294	0.46
<b>LIABILITIES</b>							James Bay (ORE 100.0%)	326	0.51	352	0.55	413	0.65
Creditors	\$USm	37	36	49	73	80	Borax	14	0.02	13	0.02	13	0.02
Borrowings	\$USm	220	301	301	301	301	Other	374	0.59	412	0.65	433	0.68
Lease liabilities	\$USm	31	36	52	52	52	Corporate costs	(75)	(0.12)	(81)	(0.13)	(81)	(0.13)
Provisions	\$USm	34	36	50	50	50	Total enterprise value	4,036	6.33	4,453	6.98	4,682	7.34
Tax related liabilities	\$USm	119	188	546	546	546	Net debt	(225)	(0.35)	(2)	(0.00)	(69)	(0.11)
Other liabilities	\$USm	14	28	28	28	28	Equity value	4,262	6.68	4,455	6.99	4,751	7.45
<b>Total liabilities</b>	<b>\$USm</b>	<b>455</b>	<b>624</b>	<b>1,026</b>	<b>1,051</b>	<b>1,057</b>	A\$m	A\$/sh	A\$m	A\$/sh	A\$m	A\$/sh	
<b>NET ASSETS</b>	<b>\$USm</b>						Equity value	5,909	9.27	6,177	9.69	6,588	10.33
Share capital	\$USm	548	669	2,785	2,785	2,785							
Retained earnings	\$USm	71	11	85	245	524							
Reserves	\$USm	(17)	(13)	(13)	(13)	(13)							
Non-controlling interest	\$USm	88	58	58	58	58							
<b>SHAREHOLDER EQUITY</b>	<b>\$USm</b>	<b>691</b>	<b>725</b>	<b>2,915</b>	<b>3,076</b>	<b>3,355</b>							
Weighted average shares	m	265	331	564	637	637							

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

# Liontown Resources Ltd (LTR)

LTR is a Perth-based mineral exploration and development company. The company's focus is the Kathleen Valley lithium project (100% LTR). Key DFS metrics are an NPV<sub>(8% real)</sub> of \$4.2b from spodumene production of around 511ktpa from 2024 expanding to 658ktpa, with an initial capital cost of \$473m. Integrating downstream refining increases the project's NPV<sub>(8% real)</sub> to \$9.6b from lithium hydroxide production expanding to 86ktpa (75ktpa LCE) and additional capital costs of \$1.5b. LTR have assumed Roskill (Wood Mackenzie) long term lithium pricing estimates: Spodumene concentrate US\$1,392/t FOB; and lithium hydroxide monohydrate US\$29,401/t. The company also has a strong ESG focus as exemplified by its recently announced Native Title Agreement and net zero by 2034 carbon emission target.

## Investment view: Speculative Buy, Valuation \$2.15/sh

LTR is funded for Kathleen Valley's initial development capital. A definitive feasibility study outlined 658ktpa SC6 production with potential for conversion into 86ktpa lithium hydroxide (75ktpa lithium carbonate equivalent, LCE). LTR is independent, debt free with significant uncommitted offtake; a strong strategic position in a market for lithium facing supply shortages. Key catalysts are awarding development contracts, procuring long lead-time equipment, signing offtake contracts and commencing development.

Our LTR valuation is \$2.15/sh and recommendation is Speculative Buy (unchanged). LTR is a mine development company with prospective operations and cash flows. Our Speculative risk rating recognises this higher level of risk and volatility of returns.

Table 8 - LTR financial summary

Date	17/01/22					Bell Potter Securities							
Price	A\$/sh	1.72					Stuart Howe (showe@bellpotter.com.au, +61 3 9235 1856)						
Target price	A\$/sh	2.15											
<b>PROFIT AND LOSS</b>							<b>FINANCIAL RATIOS</b>						
Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e	Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e
Revenue	\$m	0	-	-	-	377	<b>VALUATION</b>						
Expenses	\$m	(13)	(11)	(8)	(8)	(207)	EPS	Ac/sh	(0.8)	(0.6)	(0.4)	(0.4)	5.6
<b>EBITDA</b>	<b>\$m</b>	<b>(13)</b>	<b>(11)</b>	<b>(8)</b>	<b>(8)</b>	<b>169</b>	EPS growth (Acps)	%	na	na	na	na	na
Depreciation & amortisation	\$m	(0)	-	-	-	(44)	PER	x	-224.0x	-288.9x	-429.1x	-394.3x	30.6x
EBIT	\$m	(13)	(11)	(8)	(8)	125	DPS	Ac/sh	-	-	-	-	-
Net interest expense	\$m	0	0	-	(2)	(3)	Franking	%	0%	0%	0%	0%	0%
Profit before tax	\$m	(13)	(11)	(8)	(10)	122	Yield	%	0%	0%	0%	0%	0%
Tax expense	\$m	-	0	-	-	-	FCF/share	Ac/sh	(0.9)	(0.4)	(1.9)	(17.9)	(0.4)
<b>NPAT (reported)</b>	<b>\$m</b>	<b>(13)</b>	<b>(11)</b>	<b>(8)</b>	<b>(10)</b>	<b>122</b>	FCF yield	%	-1%	0%	-1%	-10%	0%
<b>NPAT (adjusted)</b>	<b>\$m</b>	<b>(13)</b>	<b>(11)</b>	<b>(8)</b>	<b>(10)</b>	<b>122</b>	EV/EBITDA	x	-254.2x	-295.4x	-409.0x	-409.0x	19.3x
<b>CASH FLOW STATEMENT</b>							<b>LIQUIDITY &amp; LEVERAGE</b>						
Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e	Net debt / (cash)	\$m	(5)	(13)	(506)	(116)	(107)
<b>OPERATING CASH FLOW</b>							Net debt / Equity	%	-81%	-93%	-100%	-23%	-17%
Receipts from customers	\$m	-	2	-	-	-	Net debt / Net debt + Equity	%	-417%	-1,331%	-59,131%	-0,030%	-0,021%
Payments to suppliers and employees	\$m	-	-	-	-	-	Net debt / EBITDA	x	0.4x	1.1x	63.3x	14.5x	-0.6x
Tax paid	\$m	-	-	-	-	-	EBITDA / net int expense	x	-129.7x	-586.5x	na	5.3x	-56.5x
Net interest	\$m	0	0	-	(2)	(3)	<b>PROFITABILITY RATIOS</b>						
Other	\$m	(16)	(10)	(7)	(8)	114	EBITDA margin	%	na	-1846%	na	na	45%
<b>Operating cash flow</b>	<b>\$m</b>	<b>(16)</b>	<b>(8)</b>	<b>(7)</b>	<b>(10)</b>	<b>111</b>	EBIT margin	%	na	-1846%	na	na	33%
<b>INVESTING CASH FLOW</b>							Return on assets	%	-129%	-65%	-2%	-2%	17%
Capex	\$m	(0)	-	(1)	(381)	(120)	Return on equity	%	-154%	-71%	-2%	-2%	20%
Disposal of assets	\$m	-	2	-	-	-	<b>ASSUMPTIONS - Prices (nominal)</b>						
Other	\$m	-	(0)	(30)	-	-	<b>Year ending 30 June</b>	<b>Unit</b>	<b>2021a</b>	<b>2022e</b>	<b>2023e</b>	<b>2024e</b>	<b>2025e</b>
<b>Investing cash flow</b>	<b>\$m</b>	<b>(0)</b>	<b>1</b>	<b>(31)</b>	<b>(381)</b>	<b>(120)</b>	Li spodumene price	US\$/t	478	1,220	913	850	850
<b>FINANCING CASH FLOW</b>							Tantalum price (30% benchmark)	US\$/lb	60	60	60	60	60
Debt proceeds/(repayments)	\$m	-	-	-	50	-	FX	US\$/A\$	0.75	0.73	0.73	0.74	0.74
Dividends paid	\$m	-	-	-	-	-	<b>ASSUMPTIONS - Sales (equity)</b>						
Proceeds from share issues (net)	\$m	18	14	532	-	-	<b>Year ending 30 June</b>	<b>Unit</b>	<b>2021a</b>	<b>2022e</b>	<b>2023e</b>	<b>2024e</b>	<b>2025e</b>
Other	\$m	(0)	(0)	-	-	-	Spodumene concentrate (SC6)	kt	-	-	-	326	320
<b>Financing cash flow</b>	<b>\$m</b>	<b>18</b>	<b>14</b>	<b>532</b>	<b>50</b>	<b>-</b>	Tantalum concentrate (30%)	t	-	-	-	341	253
<b>Change in cash</b>	<b>\$m</b>	<b>2</b>	<b>7</b>	<b>494</b>	<b>(340)</b>	<b>(9)</b>	<b>VALUATION</b>						
Free cash flow	\$m	(16)	(7)	(38)	(390)	(9)		Shares	Unrisked	Risk dics	Riskd		
<b>BALANCE SHEET</b>									\$m	%	\$m	\$/sh	
Year ending 30 June	Unit	2020a	2021a	2022e	2023e	2024e	Shares on issue (diluted)	2,204					
<b>ASSETS</b>							1. Kathleen Valley Upstream		1,825	10%	1,643	0.75	
Cash	\$m	5	13	506	166	157	2. Kathleen Valley Downstream		2,900	20%	2,320	1.05	
Receivables	\$m	2	0	-	-	75	<b>TOTAL KATHLEEN VALLEY</b>		<b>4,725</b>		<b>3,963</b>	<b>1.80</b>	
Inventories	\$m	-	-	1	1	21	Corporate/admin expenses				(38)	(0.02)	
Capital assets	\$m	0	-	1	382	458	Other projects (risked)				325	0.15	
Other assets	\$m	0	3	2	2	2	<b>EV (risked)</b>				<b>4,250</b>	<b>1.93</b>	
<b>Total assets</b>	<b>\$m</b>	<b>7</b>	<b>15</b>	<b>510</b>	<b>551</b>	<b>713</b>	Net debt / (cash)				(478)	(0.22)	
<b>LIABILITIES</b>							<b>Equity value (undiluted)</b>					<b>4,728</b>	<b>2.15</b>
Creditors	\$m	-	-	-	-	-							
Borrowings	\$m	-	-	-	50	50							
Provisions	\$m	0	-	-	-	-							
Other liabilities	\$m	1	2	3	3	43							
<b>Total liabilities</b>	<b>\$m</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>53</b>	<b>93</b>							
<b>NET ASSETS</b>	<b>\$m</b>	<b>7</b>	<b>13</b>	<b>507</b>	<b>498</b>	<b>620</b>							
Share capital	\$m	63	78	610	610	610							
Reserves	\$m	2	4	4	4	4							
Accumulated losses	\$m	(59)	(68)	(107)	(116)	6							
Non-controlling interest	\$m	-	-	-	-	-							
<b>SHAREHOLDER EQUITY</b>	<b>\$m</b>	<b>7</b>	<b>13</b>	<b>507</b>	<b>498</b>	<b>620</b>							
Weighted average shares	m	1,676	1,780	2,002	2,184	2,184							

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

# Lake Resources Ltd (LKE)

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.

Table 9 - LKE financial summary

Date	17/01/22					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>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
Revenue	\$m	-	-	-	50	350
Expenses	\$m	(3)	(4)	(4)	(33)	(126)
<b>EBITDA</b>	<b>\$m</b>	<b>(3)</b>	<b>(4)</b>	<b>(4)</b>	<b>17</b>	<b>224</b>
Depreciation & amortisation	\$m	(0)	-	-	(16)	(59)
EBIT	\$m	(3)	(4)	(4)	2	165
Net interest expense	\$m	-	1	4	(8)	(19)
Profit before tax	\$m	(3)	(3)	0	(7)	146
Tax expense	\$m	-	-	(0)	-	(51)
<b>NPAT (reported)</b>	<b>\$m</b>	<b>(3)</b>	<b>(3)</b>	<b>0</b>	<b>(7)</b>	<b>95</b>
<b>NPAT (adjusted)</b>	<b>\$m</b>	<b>(3)</b>	<b>(3)</b>	<b>0</b>	<b>(7)</b>	<b>95</b>
<b>CASH FLOW STATEMENT</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
<b>OPERATING CASH FLOW</b>						
Receipts from customers	\$m	-	-	-	50	350
Payments to suppliers and employees	\$m	(2)	(4)	(4)	(33)	(126)
Tax paid	\$m	-	-	(0)	-	(51)
Net interest	\$m	-	1	4	(8)	(19)
Other	\$m	-	-	0	-	-
<b>Operating cash flow</b>	<b>\$m</b>	<b>(2)</b>	<b>(3)</b>	<b>0</b>	<b>9</b>	<b>155</b>
<b>INVESTING CASH FLOW</b>						
Capex	\$m	(5)	(10)	(351)	(294)	(6)
Other	\$m	-	-	-	-	-
<b>Investing cash flow</b>	<b>\$m</b>	<b>(5)</b>	<b>(10)</b>	<b>(351)</b>	<b>(294)</b>	<b>(6)</b>
<b>FINANCING CASH FLOW</b>						
Debt proceeds/(repayments)	\$m	0	-	270	135	-
Dividends paid	\$m	-	-	-	-	-
Proceeds share issues (net, incl. options)	\$m	33	94	174	-	22
Other	\$m	-	-	-	-	-
<b>Financing cash flow</b>	<b>\$m</b>	<b>33</b>	<b>94</b>	<b>444</b>	<b>135</b>	<b>22</b>
<b>Change in cash</b>	<b>\$m</b>	<b>26</b>	<b>81</b>	<b>93</b>	<b>(150)</b>	<b>171</b>
Free cash flow	\$m	(7)	(13)	(351)	(285)	149
<b>BALANCE SHEET</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
<b>ASSETS</b>						
Cash	\$m	26	107	200	51	222
Receivables	\$m	0	0	0	0	0
Inventories	\$m	-	-	-	-	-
Capital assets	\$m	22	32	382	660	606
Other assets	\$m	0	0	0	0	0
<b>Total assets</b>	<b>\$m</b>	<b>48</b>	<b>139</b>	<b>583</b>	<b>711</b>	<b>829</b>
<b>LIABILITIES</b>						
Creditors	\$m	1	1	1	1	1
Borrowings	\$m	-	-	270	405	405
Provisions	\$m	0	0	0	0	0
Other liabilities	\$m	-	-	-	-	-
<b>Total liabilities</b>	<b>\$m</b>	<b>1</b>	<b>1</b>	<b>271</b>	<b>406</b>	<b>406</b>
<b>NET ASSETS</b>						
Share capital	\$m	66	160	334	334	356
Reserves	\$m	3	0	0	(6)	89
Accumulated losses	\$m	(22)	(22)	(22)	(22)	(22)
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
<b>FINANCIAL RATIOS</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
<b>VALUATION</b>						
EPS (adjusted)	Ac/sh	(0.4)	(0.3)	0.0	(0.4)	6.3
EPS growth (Acps)	%	na	na	na	-14078%	na
PER	x	(286.8)	(387.2)	31,748.0	(227.1)	16.1
DPS	Ac/sh	-	-	-	-	-
Franking	%	0%	0%	0%	0%	0%
Yield	%	0%	0%	0%	0%	0%
FCF/share	Ac/sh	(0.9)	(1.1)	(24.8)	(19.1)	9.8
FCF yield	%	-1%	-1%	-25%	-19%	10%
EV/EBITDA	x	-446.4x	-289.3x	-289.3x	67.5x	5.2x
<b>LIQUIDITY &amp; LEVERAGE</b>						
Net debt / (cash)	\$m	(25.7)	(107.0)	69.8	354.3	183.2
Net debt / Equity	%	-55%	-77%	22%	116%	43%
Net debt / Net debt + Equity	%	-121%	-343%	18%	54%	30%
Net debt / EBITDA	x	9.9x	26.7x	-17.4x	20.7x	0.8x
EBITDA / net int expense	x	0.0x	4.4x	1.0x	2.1x	12.1x
<b>PROFITABILITY RATIOS</b>						
EBITDA margin	%	0%	0%	0%	34%	64%
EBIT margin	%	0%	0%	0%	3%	47%
Return on assets	%	-9%	-3%	0%	-1%	12%
Return on equity	%	-9%	-3%	0%	-2%	26%
<b>ASSUMPTIONS - Prices (nominal)</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
Spodumene concentrate (6% basis)	US\$/t	478	1,220	913	850	850
Lithium Carbonate (battery grade)	US\$/t	8,641	19,220	16,500	15,250	14,500
Lithium Hydroxide (battery grade)	US\$/t	10,510	21,247	18,181	16,750	16,000
AUD:USD	US\$/A\$	0.75	0.74	0.73	0.73	0.74
<b>LCE sales</b>						
Year ending 30 June	Unit	2021a	2022e	2023e	2024e	2025e
Kachi (100%)	kt LCE	-	-	-	3	24
Kachi (LKE equity share)	kt LCE	-	-	-	2	18
<b>VALUATION</b>						
Shares on issue	m	1,222				
Options	m	157				
Diluted shares on issue	m	1,379				
<b>Discount rate: 8.0%</b>	<b>100%</b>	<b>100%</b>	<b>LKE</b>	<b>Unrisked</b>	<b>Risk</b>	<b>Risked</b>
<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>
Kachi @ 25.5ktpa LCE	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>1.34</b>
Share price \$/sh						1.01
Valuation premium to share price						33%

SOURCE: COMPANY DATA AND BELL POTTER SECURITIES ESTIMATES

# Company performance & multiples

## Price performance comparison

Table 10 - Peer comparison - Price performance							
Company name	Share price	EV	Weekly change	1 month change	3 month change	6 month change	1 year change
<i>Prices at COB 14/01/2022</i>	A\$/sh	A\$m	%	%	%	%	%
Mineral Resources (MIN)	65.62	11,797	8%	35%	51%	11%	70%
Pilbara Minerals (PLS)	3.72	11,099	4%	36%	75%	149%	215%
IGO (IGO)	12.72	9,104	8%	18%	34%	52%	79%
Orocobre (ORE)	11.43	6,975	4%	25%	26%	65%	123%
Liontown Resources (LTR)	1.72	3,272	11%	13%	10%	143%	360%
AVZ Minerals (AVZ)	0.93	3,168	3%	28%	164%	387%	387%
Ioneer (INR)	0.82	1,588	5%	0%	26%	114%	196%
Core Lithium (CXO)	0.90	1,378	41%	73%	64%	283%	339%
Vulcan Energy Resources (VUL)	10.01	1,203	-1%	-16%	-21%	10%	11%
Lake Resources (LKE)	1.01	1,202	1%	18%	60%	161%	548%
Sayona Mining (SYA)	0.15	973	15%	25%	-3%	90%	181%
Argosy Minerals (AGY)	0.42	505	8%	47%	65%	265%	265%
Lithium Power International (LPI)	0.77	251	29%	84%	80%	248%	183%
Piedmont Lithium (PLL)	0.74	174	3%	-3%	-10%	-16%	39%
Jindalee Resources (JRL)	2.79	141	18%	32%	13%	19%	115%

SOURCE: COMPANY DATA, IRESS AND BELL POTTER SECURITIES ESTIMATES

## Resource, Reserve & production comparisons

Table 11 - Resource, Reserve & production comparisons							
Name (ASX code)	EV (\$m)	Total LCE Resource (Mt)	Total LCE Reserve (Mt)	EV /Resource (\$/t)	EV /Reserve (\$/t)	Expected annual LCE production* (kt)	EV to production (\$/t)
Pilbara Minerals (PLS)	11,078	8.2	4.7	1,357	2,357	67	166
Allkem (AKE)	6,975	18.5	2.7	377	2,589	113	62
Liontown Resources (LTR)	3,272	5.8	2.5	568	1,335	76	43
AVZ Minerals (AVZ)	3,173	8.3	2.7	380	1,176	53	60
Ioneer (INR)	1,601	0.6	0.3	2,562	5,522	10	165
Core Lithium (CXO)	1,370	0.5	0.2	2,863	5,659	29	47
Vulcan Energy Resources (VUL)	1,199	14.0	1.1	86	1,071	35	34
Lake Resources (LKE)	1,182	3.3	0.0	358	na	19	62
Sayona Mining (SYA)	1,035	1.8	0.4	562	2,882	24	42
Argosy Minerals (AGY)	510	0.2	0.0	2,312	na	11	47
Lithium Power International (LPI)	251	1.5	0.4	170	661	10	25
Piedmont Lithium (PLL)	208	1.7	0.6	123	339	35	6
Jindalee Resources (JRL)	141	10.1	0.0	14	na	na	na
<b>Mean</b>				<b>902</b>	<b>2,359</b>		<b>63</b>
<b>Median</b>				<b>380</b>	<b>1,846</b>		<b>47</b>

SOURCE: COMPANY DATA, IRESS, BELL POTTER SECURITIES ESTIMATES

NOTE: \* EXPECTED PRODUCTION FROM EXISTING OPERATIONS AND/OR PROJECTS BEING DEVELOPED

**Note:** Lithium carbonate equivalent (LCE) is the common unit of measurement used when comparing hard rock and brine lithium Resources, Reserves and production. LCE adjusts non-lithium carbonate figures to the equivalent lithium carbonate tonnes required to generate the same amount of lithium metal.

## Global lithium comps: sales growth, EBITDA margins & EV / EBITDA multiples

The following table references Bloomberg consensus estimates, not Bell Potter Securities estimates. We have adjusted estimates for June year end companies to equivalent calendar year estimates.

Table 12 - Global lithium comps: Sales growth, EBITDA margins & EV / EBITDA multiples							
Company name (ticker)	EV US\$m	Sales growth CY21 %	Sales growth CY22 %	EBITDA margin CY21 %	EBITDA margin CY22 %	EV/EBITDA CY21e x	EV/EBITDA CY22e x
Albemarle Corp (ALB.US)	28,702	19%	18%	30%	33%	24.6x	18.9x
Tianqi Lithium Corp (002466.CH)	23,829	68%	19%	62%	54%	23.4x	22.2x
Ganfeng Lithium Co (002460.CH)	22,998	76%	21%	37%	38%	20.3x	16.2x
Sociedad Quimica y Minera de Chile (SQM.US)	8,731	42%	5%	45%	43%	5.2x	5.3x
Pilbara Minerals (PLS.AU)	7,994	121%	24%	71%	70%	11.7x	9.6x
Allkem (AKE.AU)	5,033	96%	27%	67%	36%	13.0x	21.8x
Livent Corp (LTHM.US)	4,016	28%	13%	31%	84%	25.2x	7.3x
Lithium Americas Corp (LAC.US)	3,352	na	385%	-19%	36%	na	29.6x
<b>Mean</b>						<b>17.6x</b>	<b>16.4x</b>
<b>Median</b>						<b>20.3x</b>	<b>17.6x</b>

SOURCE: COMPANY DATA & BLOOMBERG

NOTE: ORE EBITDA INCLUDES 100% OF OLAROS EARNINGS, IN LINE WITH THE COMPANY'S REPORTING METHODOLOGY. ORE HAS A 66.5% INTEREST IN OLAROS.



# 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.** Bulk commodity producers are particularly reliant upon access to transport 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, development and mining inputs can fluctuate widely and cause significant differences between planned and actual operating and capital costs. Key operating costs are linked to energy and labour markets.
- **Resource growth and mine life extensions.** Future earnings forecasts and valuations may rely upon resource and reserve growth to extend mine lives.
- **Sovereign risks.** Mining companies' assets can be located in countries other than Australia and are subject to the sovereign risks of that country.
- **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 mining processes. Fossil fuel producers (coal) may be particularly exposed to the environmental risks of end markets including the electricity generation and steel production industries.
- **Operating and development risks.** Mining 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.** Mining 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:** Mining 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.

**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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**Disclosure:** Bell Potter Securities acted as Lead Manager to LTR's July 2021 \$52m placement and Joint Lead Manager to the December 2021 \$450m placement; as Lead Manager to the M16 demerger from LTR in October 2021; as Joint Lead Manager for A4N's \$50m placement in June 2021 and as joint Lead Manager to CXO's \$40m February 2021 placement and received fees for these services.

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