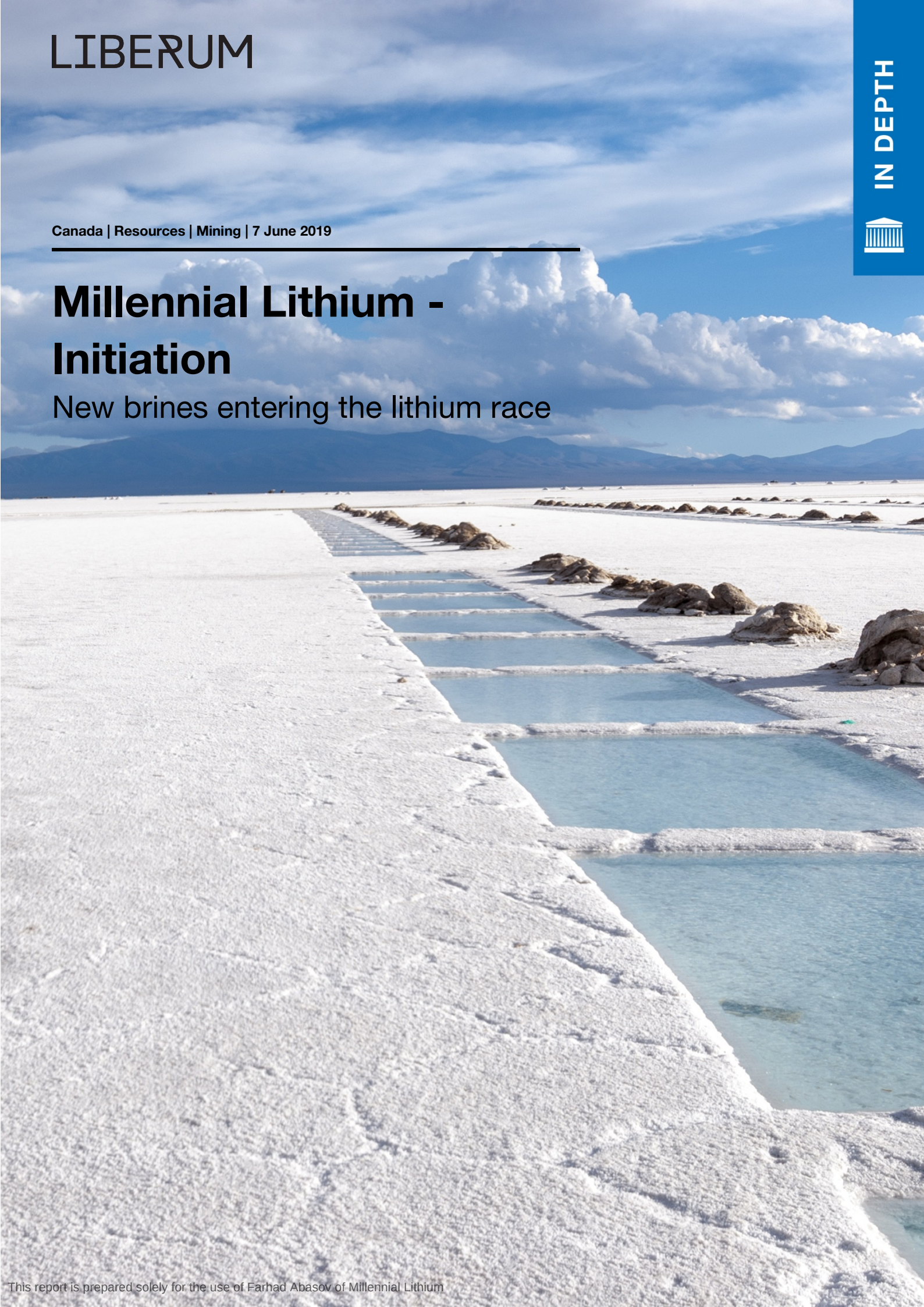
LIBERUM

IN DEPTH

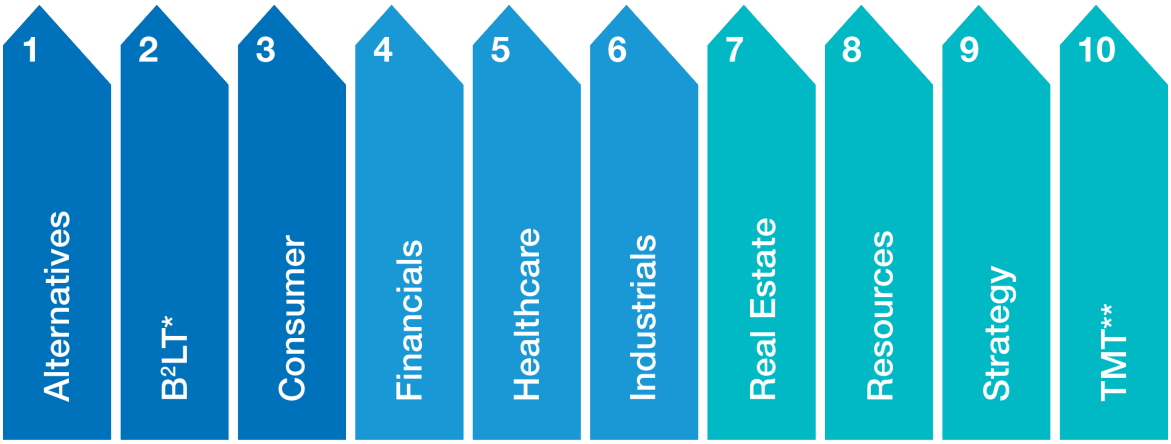
Canada | Resources | Mining | 7 June 2019

Millennial Lithium - Initiation

New brines entering the lithium race



Liberum's Pillars of Excellence



*Building, Business Services, Leisure & Transport
**Technology, Media and Telecommunications

We produce All-Cap Pan-European Equity Research across ten pillars. Using independent experts and data, we foster straightforward, original thinking. We believe that our All-Cap model facilitates read-across, and a deep and broad sector knowledge. Our goal in Research is simple: to produce well-considered and thought-provoking ideas that help our clients to make money.

Joe Brent
Head of Research
joe.brent@liberum.com
+44 (0) 20 3100 2272

LIBERUM

TSXV†

Canada | Resources | Mining | ML CN | Market Cap C$133m | 7 June 2019^

BUY **Target price C$2.20**
Publication price C$1.60

*Corporate Client of Liberum

Millennial Lithium* - Initiation
New brines entering the lithium race

Ben Davis
+44 (0) 20 3100 2083
ben.davis@liberum.com

Richard Knights
+44 (0) 20 3100 2087
richard.knights@liberum.com

Gustav Lindahl
+44 (0) 20 3100 2192
gustav.lindahl@liberum.com

Millennial Lithium's flagship project, Pastos Grandes, has the potential to be a low cost brine operation with all-in costs of $3,375/t vs expected H2 battery grade carbonate contract prices of c.$12,000/t. It is a multi-generational asset with expected capacity of 25ktpa of LCE that is capital efficient owing to its relatively simple flow sheet. Management are expecting publication of DFS and approval of EIA this year, with financing and construction to follow. Trading at 0.5x P/NPV and initiate with a BUY rating.

Competitive amongst brines

Pastos Grandes is competitive amongst the low cost brine projects, despite higher Mg/Li ratios, owing to its simpler flow sheet and better access to infrastructure.

De-risking events in 2019

Management expect to publish DFS shortly and gain EIA approval before the end of the year. They are evaluating different financing sources including development bank funding.

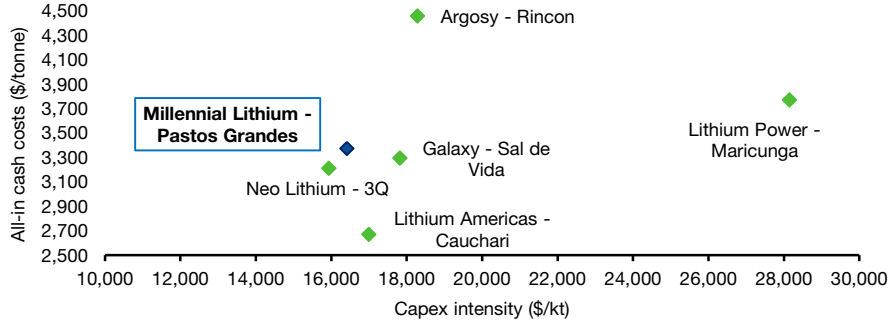
Independent supply needed

In a high growth market LR pricing should be at incentive levels ($13k/t). We estimate a 300kt deficit by 2025 which requires c.$5.5bn of investment in the next 18 months.

Valuation: C$3.15 NPV/share

Our NPV valuation of C$3.15 is based on long term lithium price forecast of $13,000/t and real WACC of 10%. Our price target of C$2.20p is based on 0.7x NPV multiple.

Competitive all in costs ($/t) and capital intensity ($/t of LCE capacity) amongst independent brine development projects



*Source: company *LCE=lithium carbonate equivalent*

Next events

EIA submission	Jun-19
DFS publication	Q3-19

Stock performance

Summary Financials & Valuation ($m)

(Feb Y/E)

EV (FY)	19E	20E	21E	22E
Market Cap	133	363	363	363
Net Debt	-36	-239	33	252
EV	95	124	395	615

Cashflow (FY)	19E	20E	21E	21E
EBITDA	-	-	-	-
Tax	-	-	-	-
Capex	-24	-45	-272	-201

Leverage (FY)	19EA	20E	21E	22E
Net debt	-36	-239	33	252
Net Debt/Mkt cap(x)	-0.3	-0.4	-2.4	0.3

Source: Liberum, Bloomberg

† TSX Venture Exchange
Liberum is not a member of the TSX Venture Exchange

Contents

Company dashboard

What it does

Millennial Lithium's flagship operation, Pastos Grandes, has the potential to be a low cost, long life brine operation in the Argentinian part of the Lithium Triangle. The operation is expected to produce 25ktpa and would be in the lower half of the cost curve. The definitive feasibility study is expected to be published shortly and EIA approval by the end of the year.

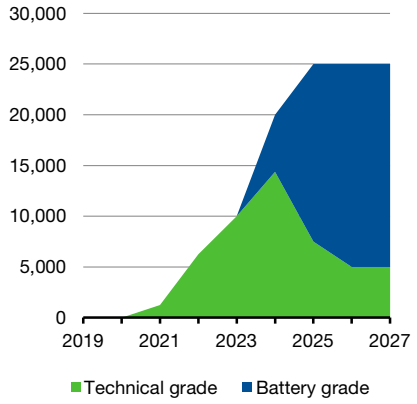
Bull case

- Low all in operating costs of $3,375/t
- Competitive capital intensity vs other brines
- Independent producers need to be financed soon....
- ...to fill the 300kt supply gap emerging by 2025
- Project delays imply cyclical bottom approaching

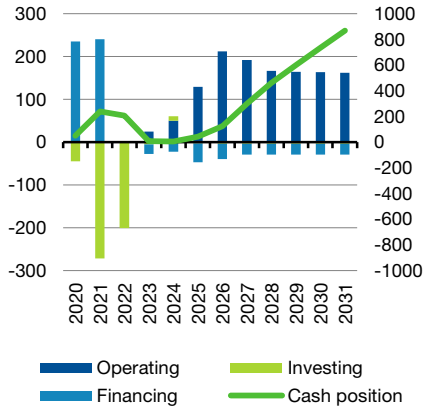
Bear case

- Supply risk from new entrants
- Not producing lithium to specification
- Election uncertainty in Argentina
- Inflation impacts from economic instability

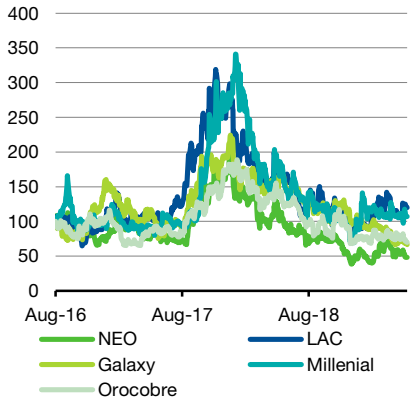
Millennial battery/technical grade lithium carbonate production split (t)



Cash flow forecast on Liberum assumptions



Indexed share price of peers



NPV/share sensitivity to LT lithium price and real WACC

		Lithium price ($/t)				
		11,000	12,000	13,000	14,000	15,000
WACC	8.0%	3.31	3.92	4.54	5.15	5.76
	9.0%	2.71	3.25	3.79	4.34	4.88
	10.0%	2.19	2.67	**3.15**	3.64	4.12
	11.0%	1.74	2.17	2.60	3.04	3.47
	12.0%	1.36	1.75	2.13	2.52	2.90

NPV/share sensitivity to changes in opex and capex PEA estimates

		Capex (%)				
		-10%	0%	10%	20%	30%
Opex (%)	-10%	4.00	3.80	3.59	3.39	3.18
	0%	3.78	3.58	3.37	3.17	2.96
	10%	3.56	3.36	**3.15**	2.95	2.75
	20%	3.35	3.14	2.94	2.73	2.53
	30%	3.13	2.92	2.72	2.51	2.31

NPV/share sensitivity to equity raise size (US$m) and price (CAD/sh)

		Equity raise price (CAD)				
		1.25	1.50	1.75	2.00	2.25
Equity raised ($)	130	3.33	3.63	3.87	4.08	4.26
	180	2.80	3.09	3.34	3.56	3.75
	230	2.41	2.69	2.94	**3.15**	3.35
	280	2.12	2.38	2.62	2.83	3.02
	320	1.93	2.18	2.41	2.62	2.80

Investment summary

- **Advanced brine project in Argentina with near-term catalysts:** Millennial Lithium's flagship project, Pastos Grandes, has the potential to be a multi-generational and low cost asset producing 25kt lithium carbonate equivalent (LCE) in the next three years. The company expects to deliver its definitive feasibility study (DFS) and gain approval for its environmental impact study (EIA) later this year. Possible funding from capital markets, its strategic partner or the sale of the project would then follow.
- **Fewer hurdles than competing brines:** Millennial's flow sheet is relatively simple and it has easy access to transportation, power and natural gas. Salta province is considered one of the most mining friendly jurisdictions by the Fraser Institute and there are no obvious environmental concerns. The company has built up a strong management team with extensive expertise in lithium brines and delivering shareholder value.
- **Competitive capital and operating cost position:** All brine projects have different chemistries and different technical challenges that manifest in operating and capital costs. In Millennial's case, lower lithium grades and a higher Mg/Li ratio than many of its peers are offset by the simplicity of its flow sheet and easy access to infrastructure. Expected capital intensity of $16,400/t and opex $3,375/t puts it amongst the best in class for aspiring brine development projects.
- **Strategic investment from Chinese clean energy company:** Golden Concord Ltd, one of the largest integrated energy services providers in China that specialises in clean energy, has invested in Millennial Lithium through a wholly owned subsidiary and controls 17% of the company. It also owns 35% of GCL-Poly, one the world largest solar photovoltaic enterprises, listed in Hong Kong at $9.6bn.
- **Independent lithium producers need to be financed:** Our base case lithium supply assumption includes all planned capacity ramp-ups from existing producers, assuming production ramp-ups in line with recent examples (25% year 1, 55% year 2, 90% year 3). Under this scenario, we believe the market will be broadly balanced between now and 2023, with significant deficits of 100kt emerging in 2024 (c.100kt LCE) and 2025 (c.300kt LCE). With existing producer growth pipelines already accounted for, this shortfall needs to be met by independent producers financed in the next 12-18 months.
- **Moving into the bottom part of the cycle:** A number of recent, high profile expansion delays may indicate that the lithium price has fallen through incentive levels for new capacity and the sector is approaching a cyclical low point. In such a fast growing market (demand tripling in the next 6 years) we believe long-run pricing should be set at incentive levels, which looks to be around $13,000/tonne.
- **Valuation** – Our net present value for Millennial Lithium is C$3.15/sh based on a real WACC of 10% and $13,000/t long term lithium price forecast. Our one year price target of C$2.20/sh is based on a multiple of 0.7x NPV, given the company's current stage of development, and presents 37.5% upside from the current share price.

Brines entering the race

The race to build new lithium supply to meet expected demand from electric vehicles is very much under way. The less capital intensive hard rock projects in Australia are leading the pack, although effective conversion capacity isn't keeping pace. Other new entrants, such as Nemaska Lithium and Bacanora Minerals with unique processing routes have fallen at the financing hurdle. Bringing up the back are the independent brine projects from the South American lithium triangle.

Brine projects are slow starters as they are typically more capitally intensive and have a slower ramp up than the hard rock projects. However the lower cost of operations should see them eventually pull ahead and occupy the bottom half of the cost curve.

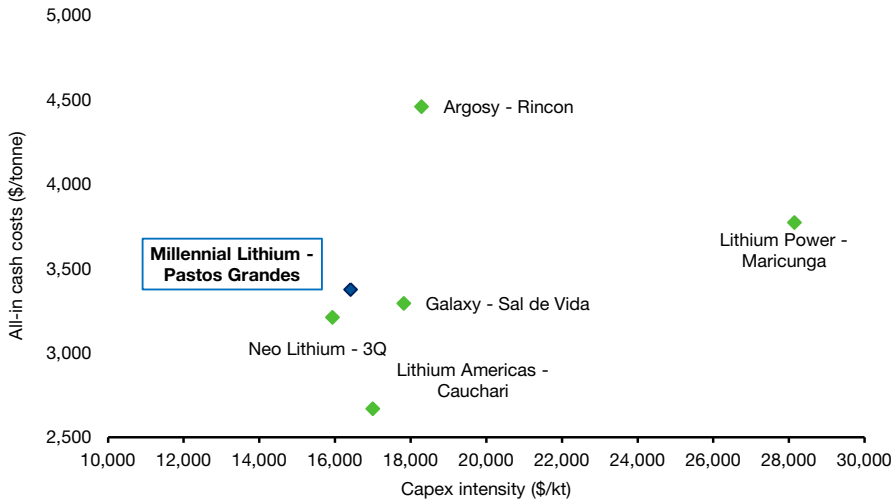
Figure 1: Brine project schedule and targets

Company	Project	PEA/PFS	DFS	Financing	First production	Comment
Lithium Americas	Cauchari	-	Mar'17	Apr'19	H2'20	Latest funding deal with Gangfeng should see project through to first production
Galaxy	Sal de Vida	Oct'11	May'18	Postponed	-	Failed to find a partner for the project that offered value and will wait until improvement in market sentiment
Millennial Lithium	Pastos Grandes	Feb'18	Q2'19	Q4'19	2021	EIA submission expected imminently and the DFS on course for Q3'19 with financing to follow
Argosy	Rincon	Nov'18	-	2019	2021	Looking to secure additional financing and offtakes
Neo Lithium	3Q	Mar-19	H1'20	H1'20	2021	Submitted EIA in April, expects approval in 2019 and then feasibility and financing in first half of next year
Lithium Power	Maricunga	Dec'17	Jan'19	Q3-19	2023	Financing & offtake discussions underway, EIA expected in 2019

Source: company presentations

Many of these brine projects are being developed by juniors in Argentina and all of them will be competing for capital. The projects are similar but all have their own challenges depending on their brine chemistry, location and stage of development. Millennial Lithium sits very competitively in the bottom left corner of the following chart which benchmarks expected operating costs against capital intensity. In this note, we dig a little deeper into the components that make up these capital intensity and opex numbers.

Figure 2: All-in costs ($/t) vs capex intensity ($/t of capacity)



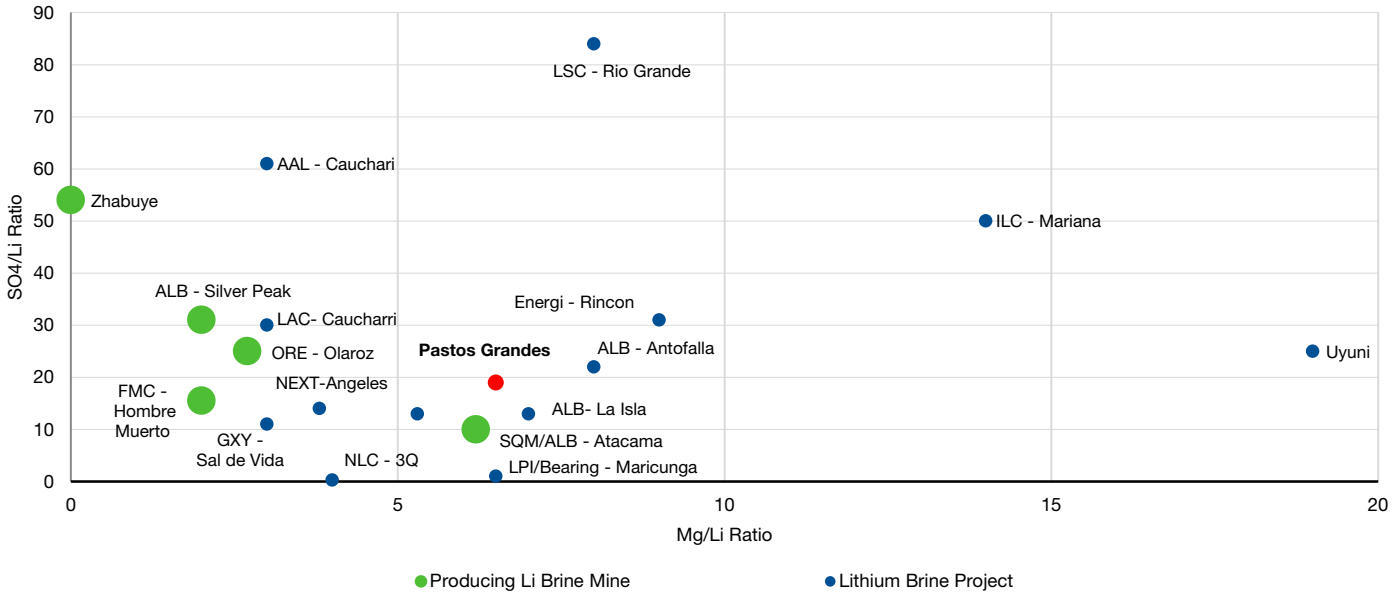
*Source: company presentations *All in costs include sustaining and deferred capital spread over life of mine*

Brine chemistry at Pastos Grandes favourable, despite magnesium

The grade of a mining resource is typically one of the key determinants in its economics, but for brine developments this isn't the case. Overall chemistry has a far larger impact on a project's operating cost than its headline grade.

The aim of all brine processing is to precipitate out salts from the ponds through evaporation and then extract the remaining impurities in the plant. However, as no two brine chemistries are the same, different process flow sheets are used depending on the chemical makeup of the brine (see section "Pastos Grandes flow sheet"). When considering a process flow sheet engineers must make trade-offs between pond sizes, salt harvesting techniques, use of reagents and overall recovery rates to maximise efficiency and minimise operating costs.

Figure 3: Sulphate and Magnesium ratio to Lithium content in brine



Source: company presentations

One of management's chief challenges at Pastos Grandes is the relatively high content of magnesium relative to lithium, which requires increased use of quick lime and soda ash in the extraction process. These two reagents account for 92% of chemical costs or 43% of overall operating costs estimated in the preliminary economic assessment.

Figure 4: Reagents uses and Pastos Grandes operating costs (US$/t)

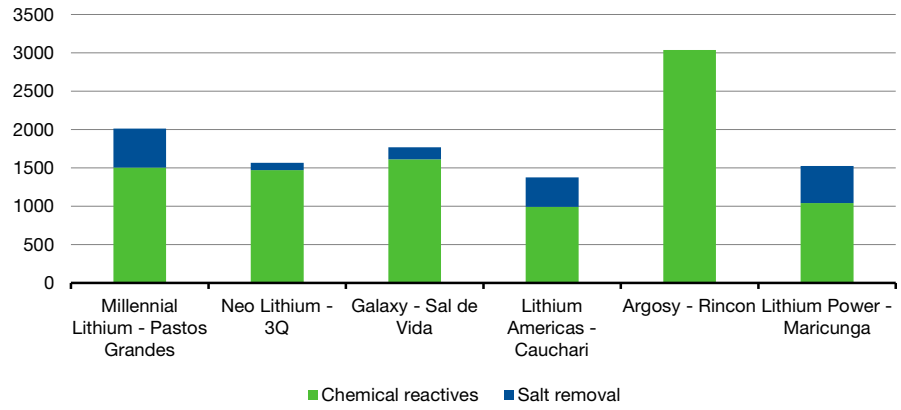
	Use	US$/t	%
Quick lime (calcium oxide)	Removing magnesium	667	44%
Soda Ash (Sodium carbonate)	Carbonation and removing remaining calcium and magnesium	718	48%
Sulphuric Acid	Cleaning	4	0%
Sodium sulphate	Removing excess calcium	0	0%
Extractant, diluent, modifier	Removing boron	24	2%
Hydrochloric Acid	Removing boron	51	3%
Sodium Hydroxide	Removing boron	18	1%
Carbon Dioxide	Purification to battery grade	19	1%
Reagent total		**1502**	

Source: company report

However offsetting this is the relatively high presence of sulphates that helps with the precipitation of calcium and negates the need for adding sodium sulphate. It is for this reason that the company has comparable reagent costs to Sal de Vida and Neo Lithium's 3Q but higher than Lithium Americas Caucharri.

The higher levels of impurities at Pastos Grandes does mean salt has to be moved more regularly, although this will not affect the first couple of years of production as the salt mounds in the ponds build up. Millennial is also outsourcing the salt harvest costs to an outside contractor who will provide the equipment and personnel as well as transporting the discarded salts, helping to reduce the capital costs of the project.

Figure 5: Chemical reagent operating costs ($/t LCE)

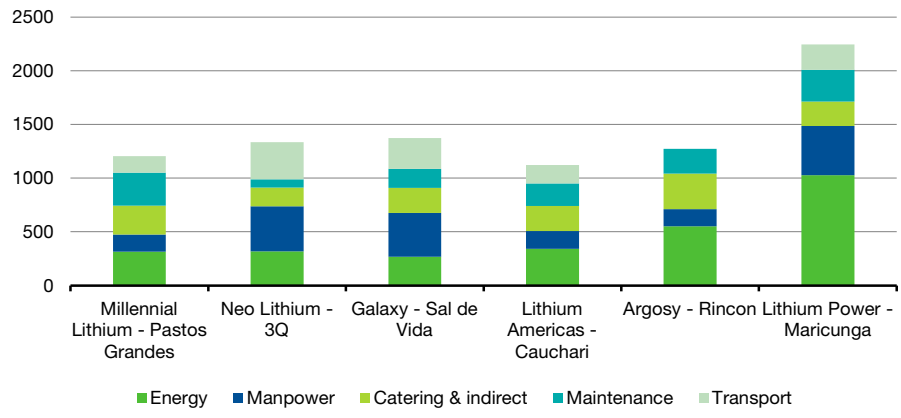


Source: company presentations

Lower sustaining and other operating costs than peers

Stripping out reagent costs, Millennial generally fares better on the other operating costs than its peers. In particular it has transport advantages as it doesn't have to truck a highly acidic brine solution between the ponds and plants (Neo Lithium) and can export product via the Panamerican highway. The outlier here is the Maricunga project, where high energy costs are due to higher electricity prices in Chile and large use of diesel for salt removal.

Figure 6: Other operating costs (US$/t)



Source: company presentations

Finally, sustaining capital typically adds $150 to $180/t a year to operating costs, with the exception of Neo Lithium that has material deferred capex as it is able to phase its build out of ponds & wells because of grade variation and high flow rates in different parts of the brine. Overall Millennial Lithium does have slightly higher operating costs than some of its brine competitors but it will still sit comfortably below the operating costs of the marginal non-integrated hard rock assets at c.$9,000/t.

Figure 7: Breakdown of all in costs by company ($/t)

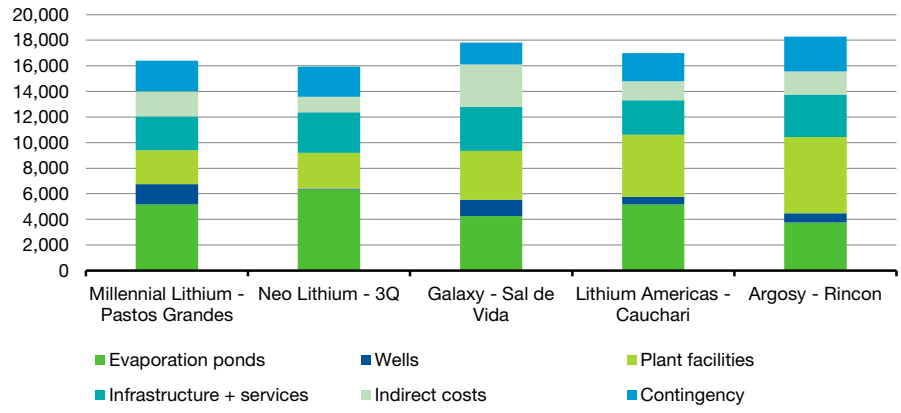
	Millennial Lithium Pastos Grandes	Neo Lithium 3Q	Galaxy Sal de Vida	Lithium Americas Cauchari	Argosy Rincon	Lithium Power Maricunga
Chemical reactives	1502	1469	1,610	991	3,037	1,040
Salt removal	512	98	160	383		486
Energy	315	318	267	341	551	1,028
Manpower	161	420	409	166	159	458
Catering & indirect	269	174	233	234	333	228
Maintenance	307	78	179	210	230	295
Transport	152	344	286	170		237
Total	**3,218**	**2,901**	**3,144**	**2,495**	**4,310**	**3,772**
Sustaining + deferred capital	157	310	150	175	150	183
Total	**3,375**	**3,211**	**3,294**	**2,670**	**4,460**	**3,955**

*Source: company, Liberum estimates *sustaining and deferred capital spread over life of mine*

Capital intensity at Pastos Grandes low amongst brines

The three major components of capital investment are the evaporation ponds, the plant and the associated infrastructure. Capital intensities across the various brine projects are broadly similar at $16,000-$18,000/t of LCE capacity, with the exception of the Maricunga project which at $28,000/t is an outlier.

Figure 8: Capex intensity per tonne of lithium carbonate capacity ($/t)



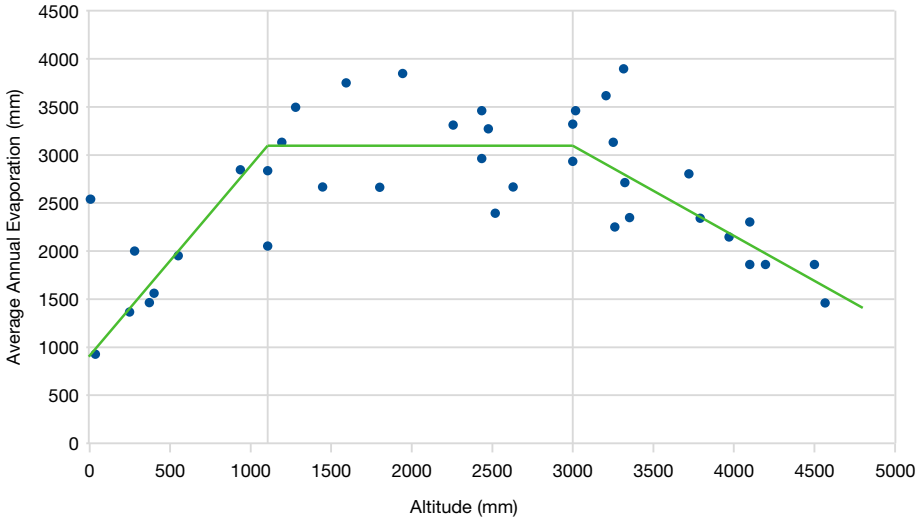
*Source: company presentations *Neo Lithium only includes phase 1 capex, deferred capex included in all-in costs analysis **classification of capital costs not necessarily consistent by company ***Sal de Vida does not include $31m cost for potash plant*

As mentioned before, lithium brine grades do not materially affect operating costs, however they do have capex implications, with pond construction typically the largest component of capex.

The lower the grade of brine that is pumped from the salar, the more water has to be evaporated to get it to a suitable concentration to enter the plant (3%-6% lithium). While a higher brine grade is preferable from a processing perspective, there is a trade off as increased grade results in lower overall recoveries as more lithium is left trapped in the unrecovered salts left in the ponds.

The three key factors that will drive grade to the plant are evaporation rates, residency time in the ponds, and the size of the ponds. The net evaporation rate is affected by climate variables of solar radiation, the air's relative humidity, wind speed, temperature changes and rainfall. The high altitudes of the Lithium Triangle (see Fig 36) have typically very dry air, high wind speeds, intense sunshine and low rainfall. The net annual evaporation rate (evaporation minus precipitation) is expected to be around 2,500mm per year in this area of the Puna for Pastos Grandes.

Figure 9: Elevation vs average annual pan evaporation



Source: DGA 2009

Millennial's lower grades and lower flow rates compared to Neo Lithium means that they require more wells, 27 vs 5, and need to pump more brine into larger ponds, 12.5km^2 vs 7.0km^2 (although the difference is smaller for capital intensity as Neo Lithium has estimated for a smaller 20ktpa operation). Partially offsetting this additional spend on larger evaporation ponds is that Neo Lithium requires separate calcium removal ponds and thickeners due to the lack of sulphates in the brine.

The differences in capital intensity of plant facilities are due to inconsistencies between the categorisation of various indirect costs. They are broadly similar once this is accounted for, with the exception if a company chooses to extract the potash by-product from the brine. At current potash prices and the relatively low grades found Argentinean brines, there has been little incentive for companies to make the additional investment.

Strategic partnership with GCL differentiates

Millennial Lithium received a strategic investment of $30m from Million Surge Holdings Limited in November 2017. The company is a wholly-owned subsidiary of Golden Concord Group Limited, one of the largest integrated energy services providers in China that specialises in clean energy and new energy. GCL currently control 17% of Millennial Lithium stock.

As part of the private placement, GCL is granted the right to nominate a representative to the Company's Board of Directors as long as it holds 15% or more of the issued and outstanding shares of Millennial Lithium (on a non-diluted basis). GCL is also granted, until the earlier of either (i) three (3) years after closing of the Private Placement, or (ii) GCL's interest in Millennial falls

below 15% (on a non-diluted basis), the right to participate in or match future share issuances so that it may maintain its percentage interest. The private placement does not secure any future offtake.

There has been nervousness around Chinese investment in the sector after NextView Capital failed to forward vital placing proceeds to Bacanora, however Golden Concord Holdings has proven to be an efficient and punctual payer. We have limited financial information on the holding company as it is private, but a key part of its business is solar, of which its subsidiary GCL-Poly is listed in Hong Kong and has an enterprise value of US$9.6bn and is well owned by institutional investors.

Figure 10: Shareholdings in GCL-Poly on Hong Kong Stock Exchange

	Holder Name	% Out
1	Golden Concord	34.75
2	Franklin Resources Inc	5.02
3	JPMorgan Chase & Co	4.95
4	Vanguard Group Inc/The	2.24
5	Dimensional Fund Advisors LP	2.07
6	BlackRock Inc	1.69
7	Guggenheim Partners LLC	1.05
8	Norges Bank	0.81
9	Government Pension Investment Fund	0.6
10	State of California	0.36

Source: Bloomberg

To date there has been limited institutional investor activity on Millennial Lithium's share register as they have raised sufficient capital through other avenues. Once the definitive feasibility study is completed and the environmental impact assessment is approved, management will likely be coming to capital markets for a combination of debt and equity.

Figure 11: Shareholdings in Millennial Lithium

	Holder Name	Position	% Outstanding shares	Investor type
1	MILLION SURGE HOLDINGS L	12,000,000	14.42	Strategic
2	Stevenson Kyle	3,076,202	3.7	Founder
3	Bowering Andrew William	2,405,895	2.89	Founder
4	Harris Graham	2,212,420	2.66	Founder & Chairman
5	GOLDEN CONCORD GRP	1,956,671	2.35	Strategic
6	Global X Management Co LLC	1,361,660	1.64	Institutional
7	Hauck & Aufhaeuser Privatbankiers	1,278,000	1.54	Institutional
8	Abasov Farhad	890,000	1.07	CEO
9	Scarr Iain	650,000	0.78	Management
10	GKM Holdings Ltd	547,075	0.66	Institutional
11	Morrison Brian Patrick	389,166	0.47	Ex - board member
12	Butler Brent William	61,275	0.07	Ex - board member
13	Lacroix Richard Joseph	20,000	0.02	Management
14	Korea Investment Management Co Ltd	19,715	0.02	Institutional
15	Scott John Edward	10,000	0.01	Board

Source: company

Independent developers needed in the lithium landscape

Underpinning any investment in an aspiring independent lithium producer, such as Millennial, are considerations around the ability of the project to attract finance and an assumption around the long-run lithium price. These two factors dictate first whether an investment is likely to have a positive return and second drive the scale of that return. They are also at least partially interdependent in a small market growing quickly, as the lithium industry is - i.e. fewer projects financed can have a meaningful impact on price in a reasonably short time frame.

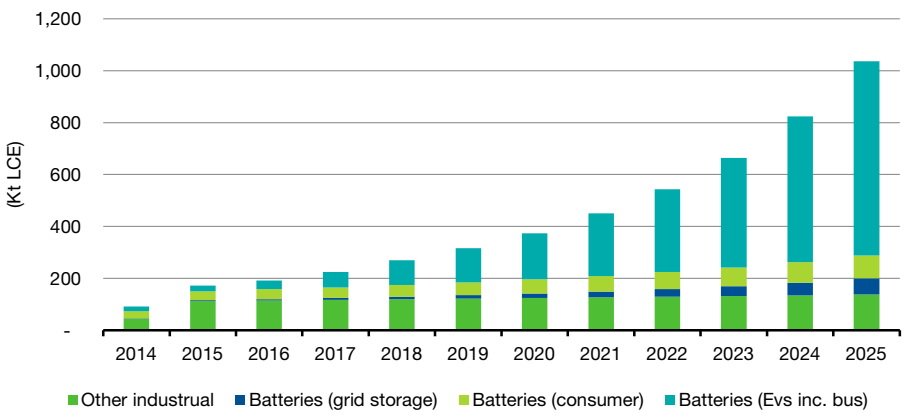
Under the demand/supply scenario we lay out here the market is broadly balanced between now and 2023, after which time a significant supply deficit emerges. We incorporate all published growth plans from existing producers to 2025, assuming production ramp-ups in line with recent historical capacity utilisation ramps, as published by Orocobre. On this basis we see a deficit of c.300kt emerging by 2025, which must be filled by independent producers in the absence of acquisitions, or further announced capacity expansions from the majors. In other words, approximately $5.5bn of fresh capital needs to be committed to independent projects in the sector in the next c.18 months, assuming c.$18k/tonne capital intensity, to companies that currently have no lithium production.

In reality such a large capital commitment is unlikely in the current environment and underscores to us the likelihood of material shortfalls in supply in 5-6 years and the significant opportunity for countercyclical investors to profit.

Demand driven by EV sales growth/mix and working capital build

We expect consumption of lithium chemicals will more than triple over the next six years from 270kt (LCE) in 2018 to 1,035kt in 2025, broadly in the middle of the published demand estimate range at c.900kt to 1,200kt (LCE).

Figure 12: Lithium consumption by end user vs. demand edit for this (Kt LCE)

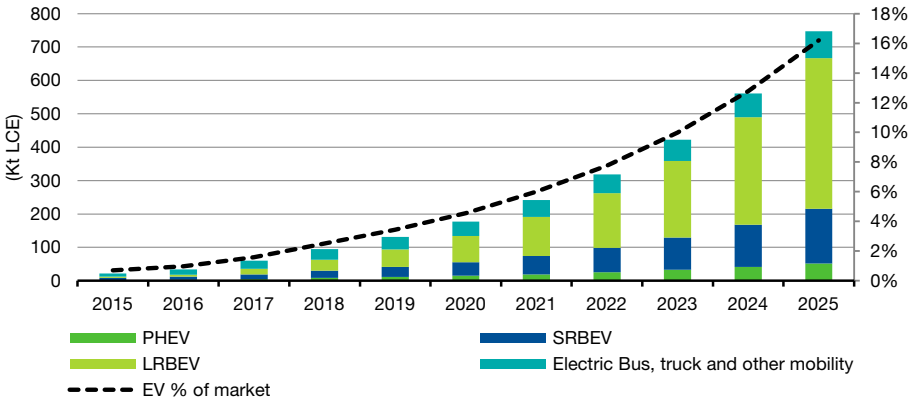


Source: Liberum estimates,

The driver of the growth will be automotive batteries and more specifically, long-range EV's which account to 65% of the growth. We provide a detailed

breakdown of our battery demand assumptions in Figure 13 or in the latest note from our Chemicals, Electric Vehicles 2019 - Business as usual, click **here**.

Figure 13: Sources of growth in lithium demand from the transportation sector



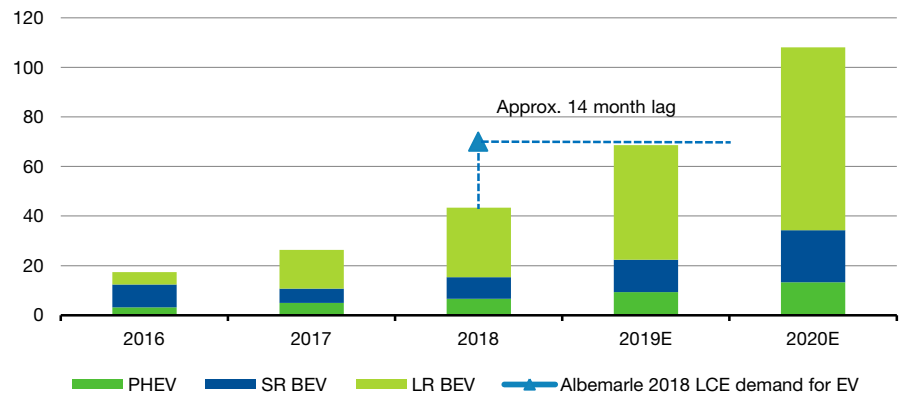
Source: Liberum

The consumption CAGR (compound annual growth rate) of 18% per annum is rapid, but we feel demand could exceed consumption as end-demand accelerates and working capital builds across the supply chain.

In 2018, we estimate that lithium consumption for EV's was occurring around 14 months ahead of expected sales – i.e. cathode and cell manufacturers were purchasing lithium carbonate and hydroxide 14 months before the vehicle, which ultimately used that lithium in its battery pack, was sold.

We use data from Albemarle which shows in 2018 70kt of LCE was consumed by plug-in EV's and 25kt consumed by other modes of transport (buses, scooters etc.). Based on our breakdown of EV sales, estimated battery sizes (Figure 41) and lithium consumption (0.95 kg/kWh)[1], we don't expect this run-rate of EV sales to be hit for another 14 months.

Figure 14: Implied LCE consumption in vehicle sales vs. actual LCE demand



Source: Liberum, Albemarle

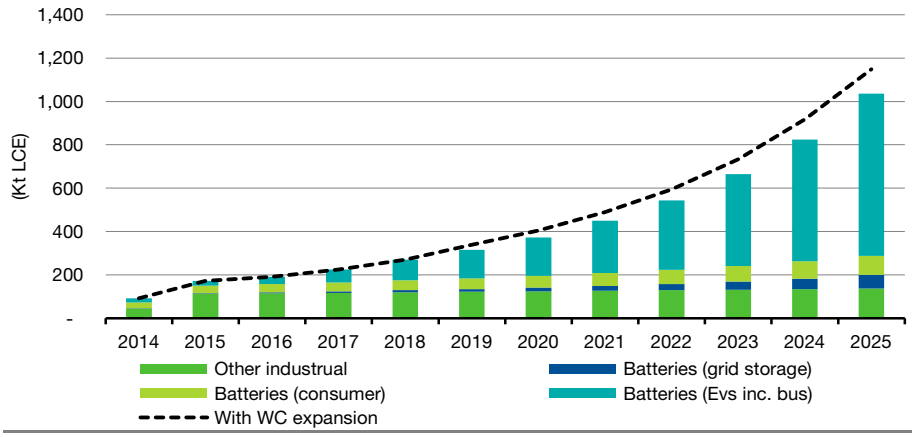
We think there is a reasonable likelihood that as end demand accelerates in nominal terms, the supply chain will lengthen as working capital is built up at cathode and battery pack manufacturers, as well as the end EV

[1] *Albemarle assumes 0.85kg LCE per kWh in cathode and 0.1 in electrolyte*

manufacturers and at car dealerships. The net impact of this working capital could feasibly add another 6 months onto the supply chain, meaning lithium chemicals would be purchased 20 months ahead of end consumption (car purchase by the consumer).

Such a working capital build out would have a meaningful impact on demand growth – by 2025 a 6 month increase in the length of the supply chain would add 112kt to demand (c.11%).

Figure 15: Liberum lithium chemical demand forecast, inc. WC build



Source: Liberum

Growth from existing producers gets us just shy of 1mt of capacity in 2023, but production ramp will lag

In our supply analysis we focus on primary financed projects and growth projects from existing producers where financing is likely to be available at their discretion.

Figure 16: Committed and easily financeable primary supply additions

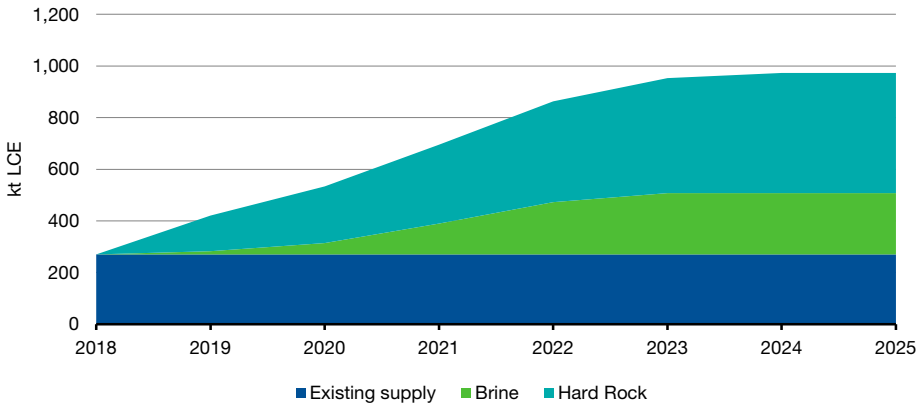
Company	Project	Country	Product	First production	Full Capacity
SQM	Salar de Atacama	Chile	Carbonate	2019	2023
SQM/Kidman	Mt Holland/Earl Grey	Australia	Spodumene con.	2022	2023
Pilbara Minerals	Pilangoora	Australia	Spodumene con.	2018	2020
Pilbara Minerals	Pilangoora stage 2	Australia	Spodumene con.	2022	2024
Albemarle/Mineral Resources	Wodgina	Australia	Spodumene con.	2019	2021
Albemarle	La Negra III/IV	Chile	Carbonate	2021	2022
Talison (Albemarle/Tianqi)	Greenbushes stage III/IV	Australia	Spodumene con.	2021	2023
Qinghai Lithium	Qauidam Basin	China	Carbonate	2020	2022
Orocobre	Salar de Olaroz expansion	Argentina	Carbonate	2021	2023
Jianxi Ganfeng, Mineral Resources, Neometals	Mt Marion	Australia	Spodumene con.	2017	2020
Lithium Americas, Gangfeng	Cauchari-Olaroz	Argentina	Carbonate	2020	2022
AMG	Mibra	Brazil	Carbonate	2018	2020
Altura	Pilgangoora	Australia	Spodumene con.	2018	2021
Livent	Salar del hombre muerto	Argentina	Carbonate	2019	2023
Alliance Mineral Assets	Bald Hill	Australia	Spodumene con.	2018	2020

Source: Liberum

NB: We exclude Rio Tinto's Jadar project from this list, despite being comfortably financeable, given no commitment

If we look just at the ramp up in target capacities (with no recovery factor applied), capacity should reach just shy of 1mt LCE as early as 2023, driven largely by hard-rock.

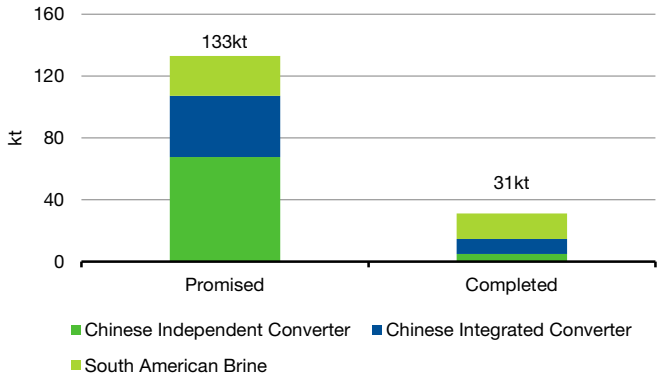
Figure 17: Capacity ramp-up by source



Source: Liberum, company reports

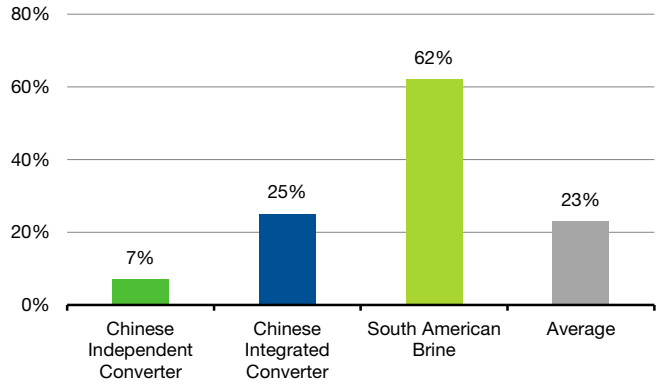
However, the production of lithium chemical and primary capacity has historically been, and are likely to continue to be, very different numbers. Orocobre estimates in 2018 only 22-23% of expected capacity was delivered in 2018.

Figure 18: Promised vs completed hydroxide expansion 2018



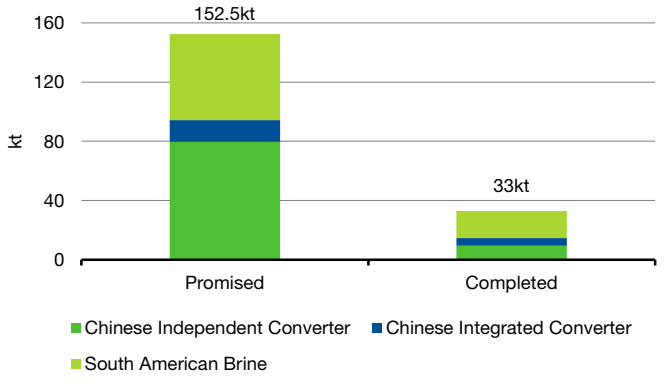
Source: Orocobre

Figure 19: Hydroxide capacity delivery rate (completed/promised)



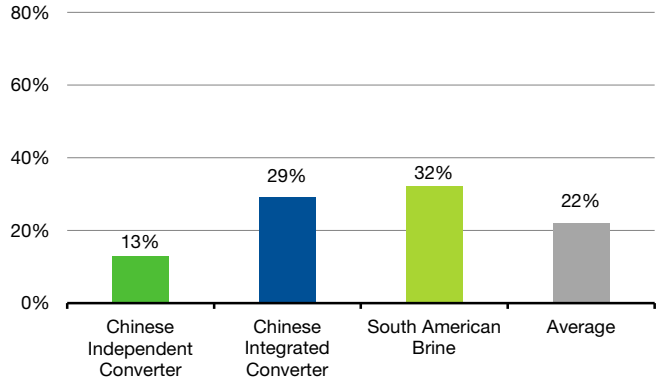
Source: Orocobre

Figure 20: Promised vs completed carbonate expansion 2018



Source: Orocobre

Figure 21: Carbonate capacity delivery rate (completed/promised)



Source: Orocobre

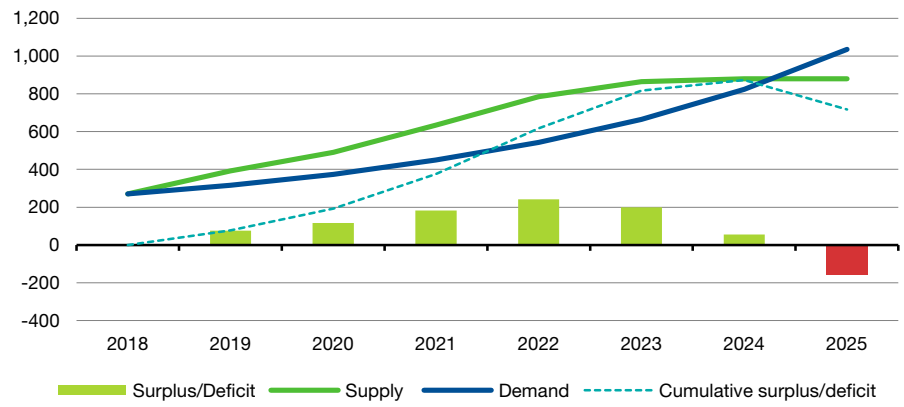
There are a few obvious reasons for this.

- Lithium chemical production is complex; small deviations in product quality anywhere along the process route can have augmented impacts when it comes to final production of the chemical. The majority of new supply is spodumene concentrate which raises a number of question marks around deliverability:
  - The entire spodumene industry only consisted of one mine prior to 2017, so available technical experience is thin and early assets (Mt Cattlin/Mt Marion) have failed to hit product spec during ramp ups. Below spec spodumene concentrate creates additional technical problems downstream for converters and may also impact recoveries.
  - A significant portion of planned capacity (Kodal, Galaxy etc.) has been sold to offtakers that must rely on third party conversion facilities to toll treat their spodumene concentrate and convert into lithium chemicals. Non-integrated facilities are likely to have greater difficulty achieving targeted recoveries.
  - Difference between nameplate and actual conversion capacity. Orocobre calculates that in 2017 converters utilizing Greenbushes feedstock were operating at 77% of stated capacity, while those using new hard rock supply were operating at only 47%.

Still a shortfall to demand post 2023, supply needs to be incentivised….

Taking our base case EV demand assumptions and assuming headline capacity = production would clearly result in a significant oversupply of lithium in the next three years.

Figure 22: Base case demand vs. un-risked financed & financeable capacity additions (kt)



Source: Liberum

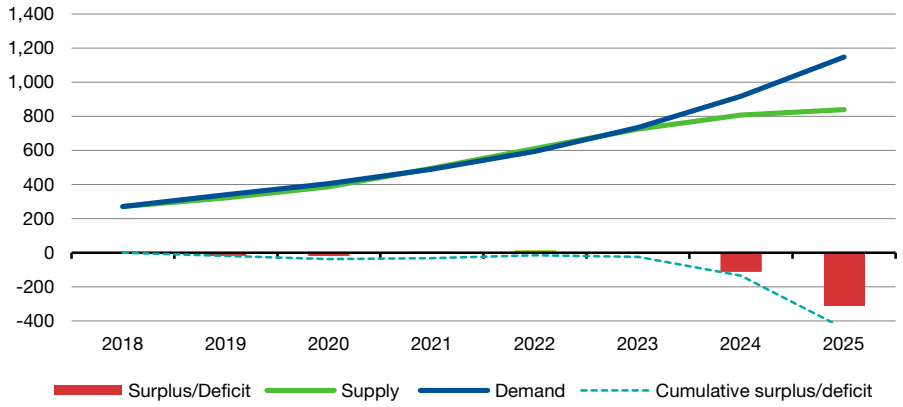
However, the surplus is quickly eradicated when we adjust the numbers for historical delivery rates and adjusting demand for working capital build.

- On supply, we assume 25% utilisation in year 1, and then optimistically assume (according to Orocobre's numbers at least) 60% utilisation in year 2 and 90% in year 3.
- On demand, we assume some working capital build throughout the supply chain as end-demand ratchets up, bringing forward ultimate demand from

EV manufacturers by 6 months, from 14 months ahead of consumption currently, to 20 months ahead of consumption.

Applying these two edits to our model eliminates the surplus until 2024, at which point a 100kt (LCE) deficit emerges, growing to 306kt by 2025.

Figure 23: Adjusted demand and capacity additions (kt)



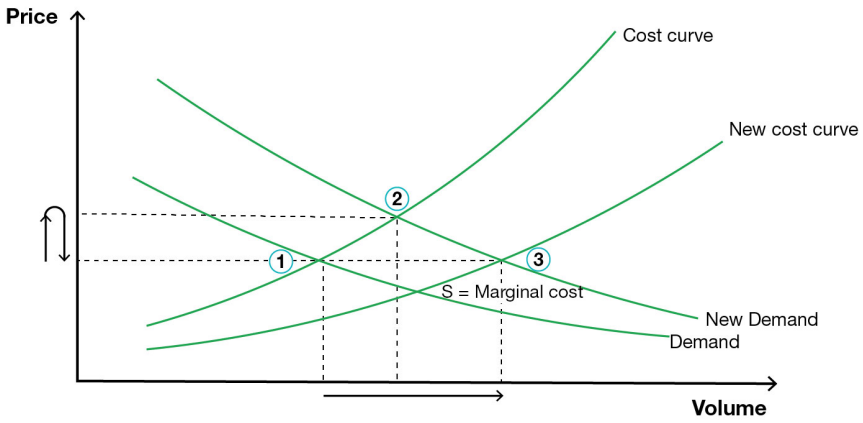
Source: Liberum

Projects attracting finance over the next 18 months are likely to be ramping up into this deficit, hence new production needs to be financed in the near-term. If we crudely assume capital intensity of $18k/tonne for both brine and spodumene/converter production, then approximately $5.5bn of fresh capital needs to be committed in the next c.18 months to balance the market in 2024/25 and beyond.

Long-run pricing needs set at incentive price, $13k/t

In most commodities, we think of the long-run price as a function the cost base of the marginal producer – i.e. we expect prices to revolve around this level over the course of the business cycle. In a demand upswing prices rise, ultimately incentivising new production, which grows until it exceeds demand. The price then falls below the marginal producer until either curtailed supply, or improved demand sees the market tighten again.

Figure 24: Typically in the mining industry we expect prices to revolve around the marginal producer



Source: Liberum

However, the scale of the shortfall post-2023 and of the likely incremental growth beyond that highlights the need to think about long-run pricing in incentive terms.

In our supply analysis we include all stated growth projects from existing producers, meaning incremental supply growth to meet this shortfall must be met by independent producers (in the absence of acquisitions, or further announced capacity expansions from the majors). The suite of projects that could (theoretically) fill this void will need to be financed in the next 18 months and include the following. This is by no means an exhaustive list, but includes only the most advanced, unfinanced projects that will be competing for capital in the next 18 months. A full list of remaining projects can be found in the appendix.

Figure 25: Next stage, but unfinanced additions

Company	Project	Country	Product
SQM	Atacama	Chile	Carbonate
Nemaska Lithium	Whabouchi	Canada	Hydroxide
Nemaska Lithium	Whabouchi	Canada	Carbonate
Neo Lithium Corp	3Q	Argentina	Carbonate
Galaxy	Sal de Vida	Argentina	Carbonate
Millennial Lithium	Pastos Grandes	Argentina	Carbonate
Bearing Lithium	Maricunga	Chile	Carbonate
Bacanora Minerals	Sonora	Mexico	Carbonate
Ganfeng/International Lithium	Mariana project	Argentina	Carbonate
Argosy	Rincon	Argentina	Carbonate
Pilbara Minerals	Pilangoora stage III	Australia	Hydroxide
Sigma Resources	Grota do Cirilo	Brazil	Hydroxide
Altura	Pilgangoora Stage II	Australia	Hydroxide

Source: Liberum

However, In the past quarter we've seen a number of high profile expansions delayed due to weak market conditions, at the same time as SQM noted that it expected achieved contract prices falling from c.$14.5kt in Q1'19 to c,$11k-12k/t in H2. Spot lithium carbonate prices have also fallen to $12.6kl/t from $13.8k/t at the beginning of the year.[2]

These delays included:

- Albemarle (Wodgina): In May Albemarle noted that it would prioritise, as the iron ore producers say, "value over volume" and would not hesitate to shut off supply from Wodgina in an adverse price environment.
- SQM (Atacama): At its Q1 results management noted that growth to 120kt has been delayed until the back end of 2021 instead of 2019. CEO Ricardo Ramos said it was not because of demand, rather technical challenges, but in the current environment with prices falling incentives to push aggressively forward are lower. We would take this as a signal of incentive price being crossed.
- Galaxy (Sal de Vida): Project was delayed because a buyer couldn't be found to JV with them at the desired price level. The delay illustrates a mismatch between owner and investor valuations, implying prices have moved below those needed to incentivise selection.

These delays help add to the case that a view of $13k/t lithium in the long-run is needed to bring new projects over the line and keep the market in balance. In the event prices fall further below $13k/t we envisage a further push-back of unfinanced, but expected growth projects from the majors.

[2] *Benchmark Minerals Asia Lithium Carbonate CIF swap*

Valuation: C$3.15 per share

Our base case valuation is C$3.15/share, of which we then ascribe a NPV multiple of 0.7x, typical for mining project with environmental approvals granted and DFS published, for our one year price target of C$2.20/sh.

NPV Sensitivities

The NPV project sensitivity based on different WACC and long term lithium prices is below. As per our recently upgraded long term lithium carbonate contract price forecast to $13,000/t we ascribe a 10% Real WACC.

Figure 26: NPV sensitivity to different long term lithium prices and WACC

		Lithium price (US$/t)				
		11,000	12,000	13,000	14,000	15,000
WACC	8.0%	3.31	3.92	4.54	5.15	5.76
	9.0%	2.71	3.25	3.79	4.34	4.88
	10.0%	2.19	2.67	**3.15**	3.64	4.12
	11.0%	1.74	2.17	2.60	3.04	3.47
	12.0%	1.36	1.75	2.13	2.52	2.90

Source: Bloomberg

Upon publication of the DFS we expect a 10% increase in both operating and capex estimates.

Figure 27: NPV sensitivity to changes in opex and capex

		Capex (% chg)				
		-10%	0%	10%	20%	30%
Opex (% change)	-10%	4.00	3.80	3.59	3.39	3.18
	0%	3.78	3.58	3.37	3.17	2.96
	10%	3.56	3.36	**3.15**	2.95	2.75
	20%	3.35	3.14	2.94	2.73	2.53
	30%	3.13	2.92	2.72	2.51	2.31

Source: Liberum

We assume that of the $470m raised, 50% comes from equity raised at $2.00/sh, assuming price appreciation following the derisking events of the EIA approval and publication of the DFS, and the remainder from high yield debt.

Figure 28: NPV sensitivity to equity raise size (US$m) and raise price (CAD/sh)

		Equity raise price (CAD/share)				
		1.25	1.50	1.75	2.00	2.25
Equity raised ($m)	130	3.33	3.63	3.87	4.08	4.26
	180	2.80	3.09	3.34	3.56	3.75
	230	2.41	2.69	2.94	**3.15**	3.35
	280	2.12	2.38	2.62	2.83	3.02
	320	1.93	2.18	2.41	2.62	2.80

Source: Liberum

Cauchari East Project

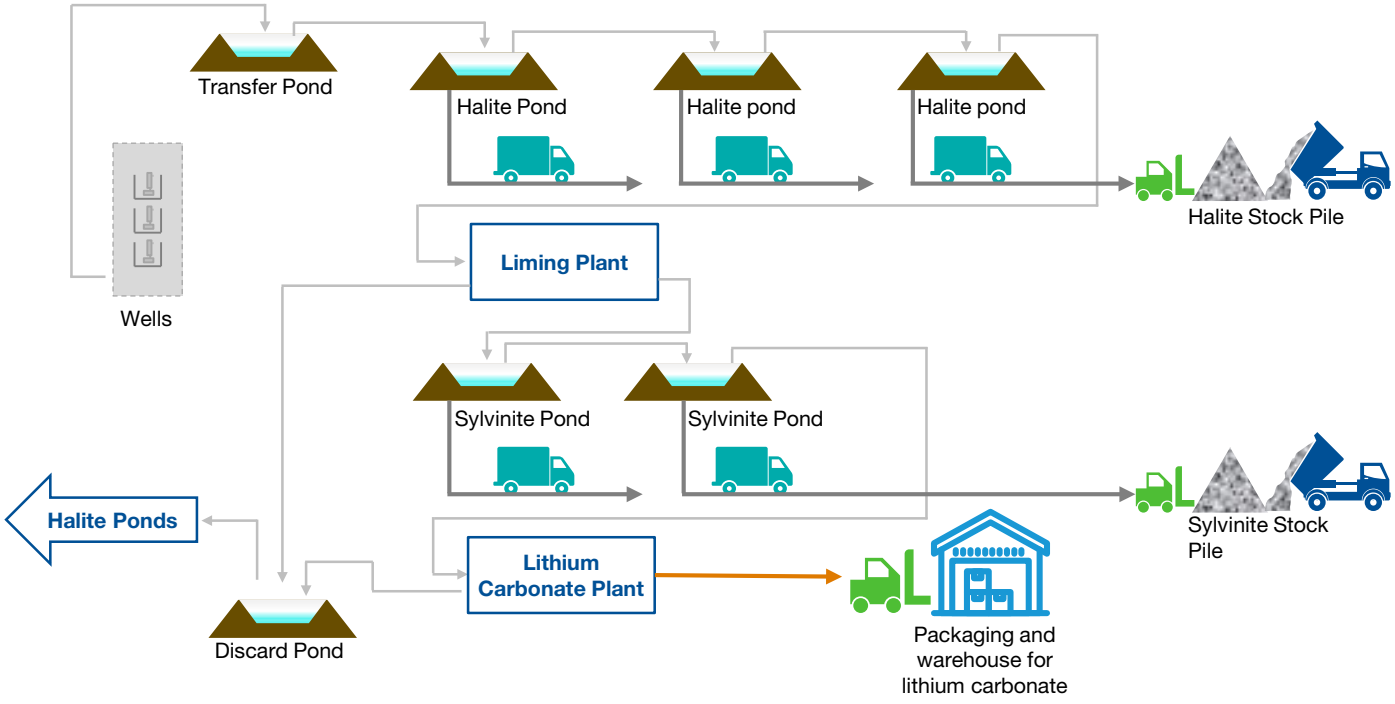
Millennial Lithium's other project is at Cauchari East and is in the same salar as Orocobre, who is already operating, and Lithium Americas, whose project is under construction. Drilling initiated in Q4'2018 and will likely be as interest for the other companies for additional resource or for the location of processing facilities. We currently attach no value to the exploration project but a disposal could be a catalyst in the future.

Company description

Pastos Grandes process overview

Figure 29 illustrates a simplified flow sheet for Millennial's Pastos Grandes project. Other projects will have similar flowsheets but will differ depending on the chemistry of the brine and the proximity of its processing facilities.

Figure 29: Process overview



Source: company presentation

The process is as follows:

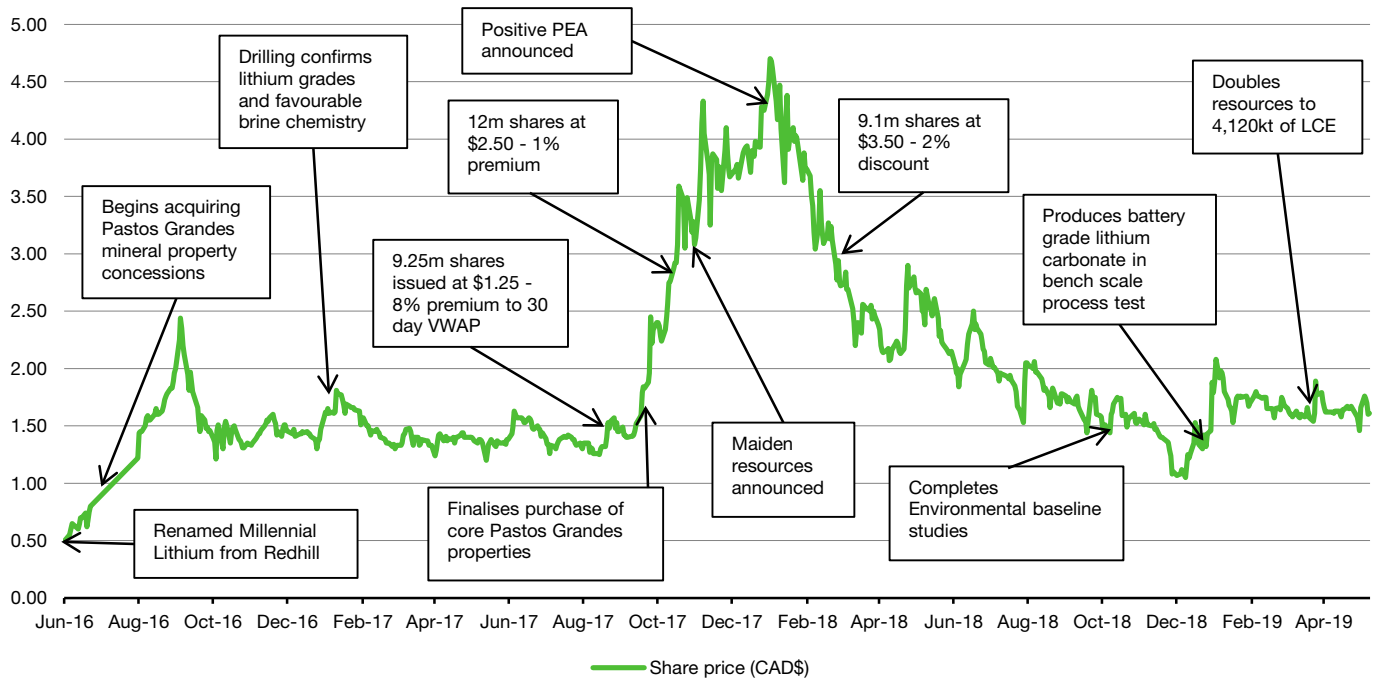
1. Brine is pumped from the production wells into the evaporation ponds. Evaporation rates in this area are particularly high because of the extreme dryness of the air and constant strong winds. As the water evaporates halite (sodium chloride or rock salt) is initially precipitated out. This residue salt at the bottom of the ponds is periodically harvested.
2. The more concentrated brine is then sent to the liming plant where slaked lime is added to aid the precipitation of the magnesium and sulphates from the brine. The brine is then pumped to additional ponds where these impurities drop out as magnesium hydroxide and gypsum.
3. Next the brine is pumped to the sylvinite ponds where the falling water levels cause potash (potassium chloride) and further halite to drop out. These will be periodically harvested and could in theory have some commercial value in the future.
4. At this point the brine solution has been concentrated to 2.5%-3% lithium after a total residency time in the ponds of 9-12 months with an estimated recovery efficiency of the lithium content of 80-85%.
5. At the lithium carbonate plant, boron is to be extracted first by dropping the pH and then raising it again with the help of other solvent extractants.

6. Primary carbonation occurs with the addition of soda ash, where the remaining magnesium and calcium is extracted as carbonates.
7. A second round of carbonation then occurs with more soda ash.
8. The mixture is then exposed to carbon dioxide to help increase the purity to battery grade
9. Finally the product is put through a centrifuge and is washed, dried and sorted between technical and battery grade, and finally packaged. The plant has roughly a 75% to 80% recovery efficiency, leading to overall system efficiency of 60% to 68%.

History of Millennial Lithium

The company has so far completed four successful raises and delivered its preliminary economics assessment, defined a resource in accordance of NI 43-101 guidelines and demonstrated the production of battery grade lithium from the brine.

Figure 30: Share price & company events (CAD/share)



Source: Bloomberg

Recent tax changes in Argentina

Following the election of President Macri, there have been various tax changes implemented in Argentina.

Corporate tax

In December 2017 a new tax reform was presented, with the most significant change being the gradual reduction of the corporate income tax from 35% in 2018 to 25% in 2020. In an attempt to promote the reinvestment of profits, the new law also introduced dividend withholding tax rates of 7% in 2018-2019, rising to 13% 2020. The withholding tax to the shareholder may be considered as a tax credit against its assessable income in its domicile Country. In general, tax losses can be carried forward up to 5 years. Under the mining law this period can be extended based on the generation of taxable income and fixed assets useful life.

Transfer pricing rules

The Law introduces rules on analysing transactions involving the import or export of goods with the participation of a foreign intermediary, which is not the actual importer at destination or exporter at origin, when at least one of the foreign parties involved is a related party. In these cases, the Law requires proof that the foreign intermediary's remuneration is in line with the risks it assumes, the functions it carries out and the assets involved.

In addition, for exports of goods with known prices and with the intervention of an intermediary (either related, or located in "non-cooperating" or low or no tax jurisdictions), the Law requires the Argentine exporter to file the agreements supporting the transactions with Federal Tax Authorities. If the agreements are not filed, the Argentine-source income from the export will be determined considering the known prices on the date the goods are loaded into the transportation vehicle. The new transfer pricing rules aligns Argentina transfer pricing rules to OECD standards.

Export tax

In September 2018 President Macri and Economy Minister Dujovne introduced what they referred to as emergency measures, which included a 12% export tax on all Argentine goods. The tax came into effect 1 January 2019 and is due to expire in December 2020. The tax is imposed on the FOB export price and for primary products it is subject to a 4 peso per US dollar cap, meaning the export duties cannot exceed 4 pesos per US dollar of the corresponding tax value or official FOB price.

Upcoming Argentinian elections could be impactful

The first round of a general election will be held in Argentina on 27 October 2019. Sitting centre-right President Mauricio Macri, who was elected in 2015, is running for re-election. Former President Cristina Fernandez de Kirchner has announced her candidacy, but will run for Vice President and support Alberto Fernandez.

Following the October 2017 midterms, Macri's re-election in 2019 seemed inevitable as his Cambiemos party swept the competition. But the following economic crisis has changed the political landscape, and in the latest polls Macri's party is polling behind Peronist Cristina Fernandez de Kirchner, who was the President of the country between 2005 and 2012.

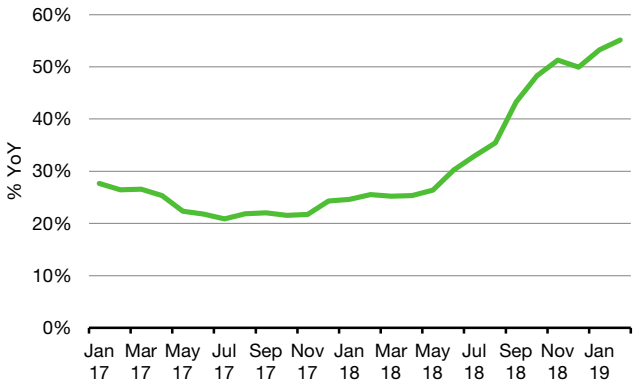
Macri has run the country during a period when the country has plunged into recession, decimated the value of its currency and Argentina have had to seek an emergency bailout of $56bn from the IMF. The IMF is an institution reviled by many Argentinians as many blame it for exacerbating the economic collapse of 2001.

The President has also failed to fulfil one of his election promises of zero inflation as the peso has plummeted leading to rapidly increasing import prices, and an inflation rate of almost 50% in 2018. The President has insisted that many of these issues were inherited from the former President and circumstances like rising interest rates in the US and a drought in 2018 which cut Argentina's export of farm goods by 20%. In addition, the fiscal deficit in 2018 was 2.6% of GDP, but Macri recently brought his campaign promise of a balance of the government budget in 2020 one year forward, to 2019.

Figure 31: Argentina interbank interest rates

Source: Central Bank of Argentina

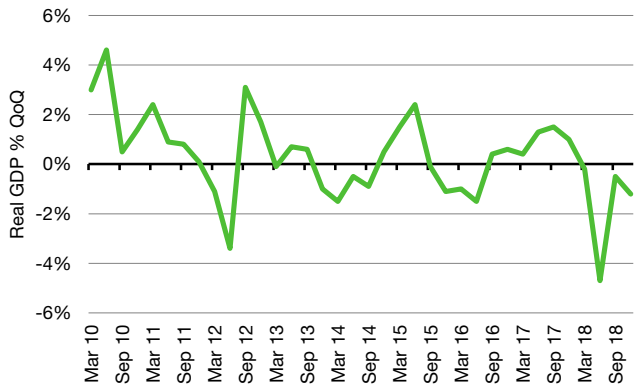
Figure 32: Argentina San Luis CPI YoY



Source: Bloomberg

Macri's market oriented policies have been welcomed by mining companies and the country is seeing its first potential new mining project in over two decades, the Agua Rica gold and copper project. But as austerity measures have had to be introduced to comply with the IMF financing program Macri's approval ratings have gone down and currently stand at around 35%. The coming months' economic performance, and how quickly that trickles down to the average Argentinian, is likely to determine whether or not Macri will be re-elected. Cristina Fernandez has her own challenges as trials begin on charges of corruption.

Figure 33: Argentina real GDP % QoQ



Source: Bloomberg

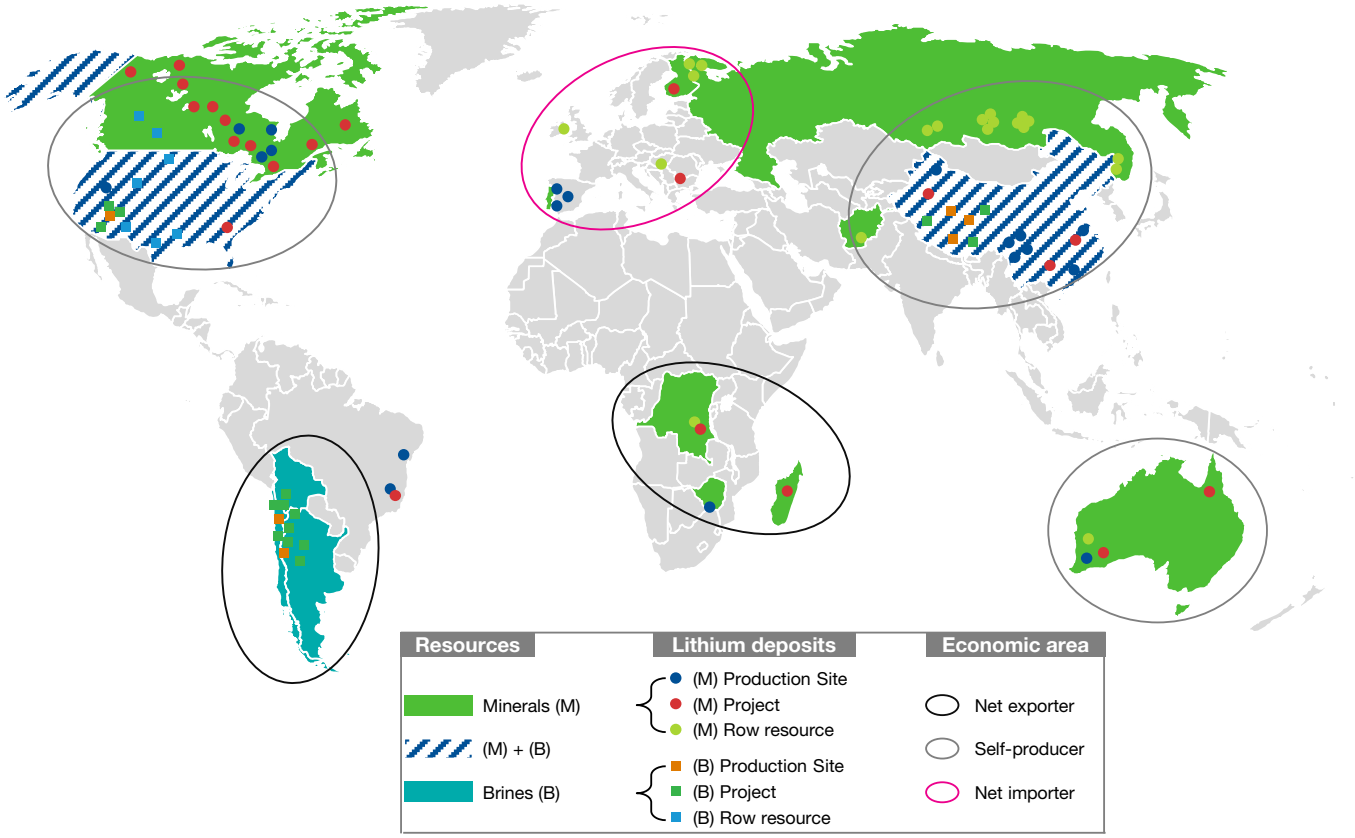
Figure 34: Argentine peso vs. USD

Source: Bloomberg

Different brine types around the world

Lithium is mined from three types of deposits, brines, pegmatites and sedimentary rocks. Brines and pegmatites, also referred to as hard-rock ore, are the two main types for commercial production. Hard-rock once dominated the global lithium supply, but as production from brine sources have proven more economical the majority of lithium carbonate today comes from brine sources in Latin America (although hard rock will once again overtake in the coming years).

Figure 35: Global lithium deposits



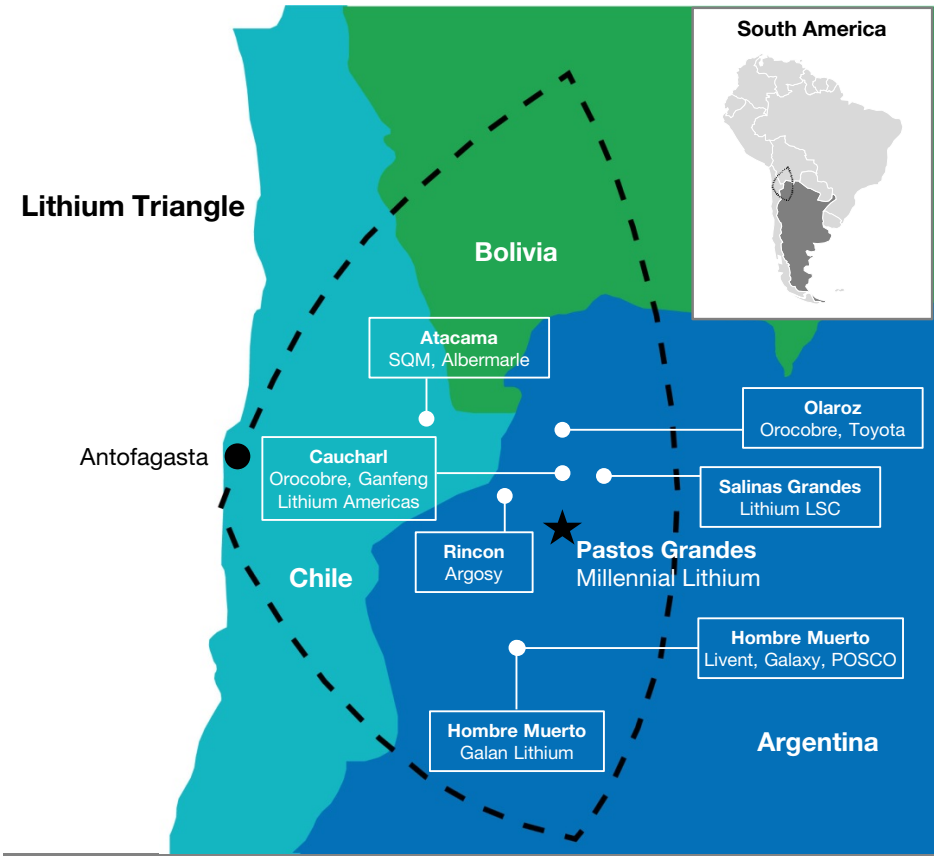
Source: TSX Media

There are three type of brine deposits, continental, geothermal and oil field. The most common are continental saline desert basins, also known as salt lakes, salt flats or salars. Salt lakes are located in geothermal activity areas and contain sand, minerals with brine and saline water with a high salt concentration. Brine deposits represent about two thirds of global lithium sources and are mainly located in Chile, Argentina, China and Tibet.

Geothermal brine deposits make up about 3 percent of global lithium resources and are comprised of a hot, concentrated saline solution that has circulated through crustal rocks in areas of extremely high heat flow and become enriched with elements such as lithium, boron and potassium. Oil field brines are deposits where the lithium is found in deep oil reservoirs and these also make up about 3 percent of global resources.

The process of extracting the lithium from brines involves pumping the brines into a series of evaporation ponds to crystallize other salts, leaving lithium-rich liquor. This liquor is further processed to remove impurities before conversion to either lithium carbonate or lithium chloride for further upgrading to lithium hydroxide.

Figure 36: ABC lithium triangle

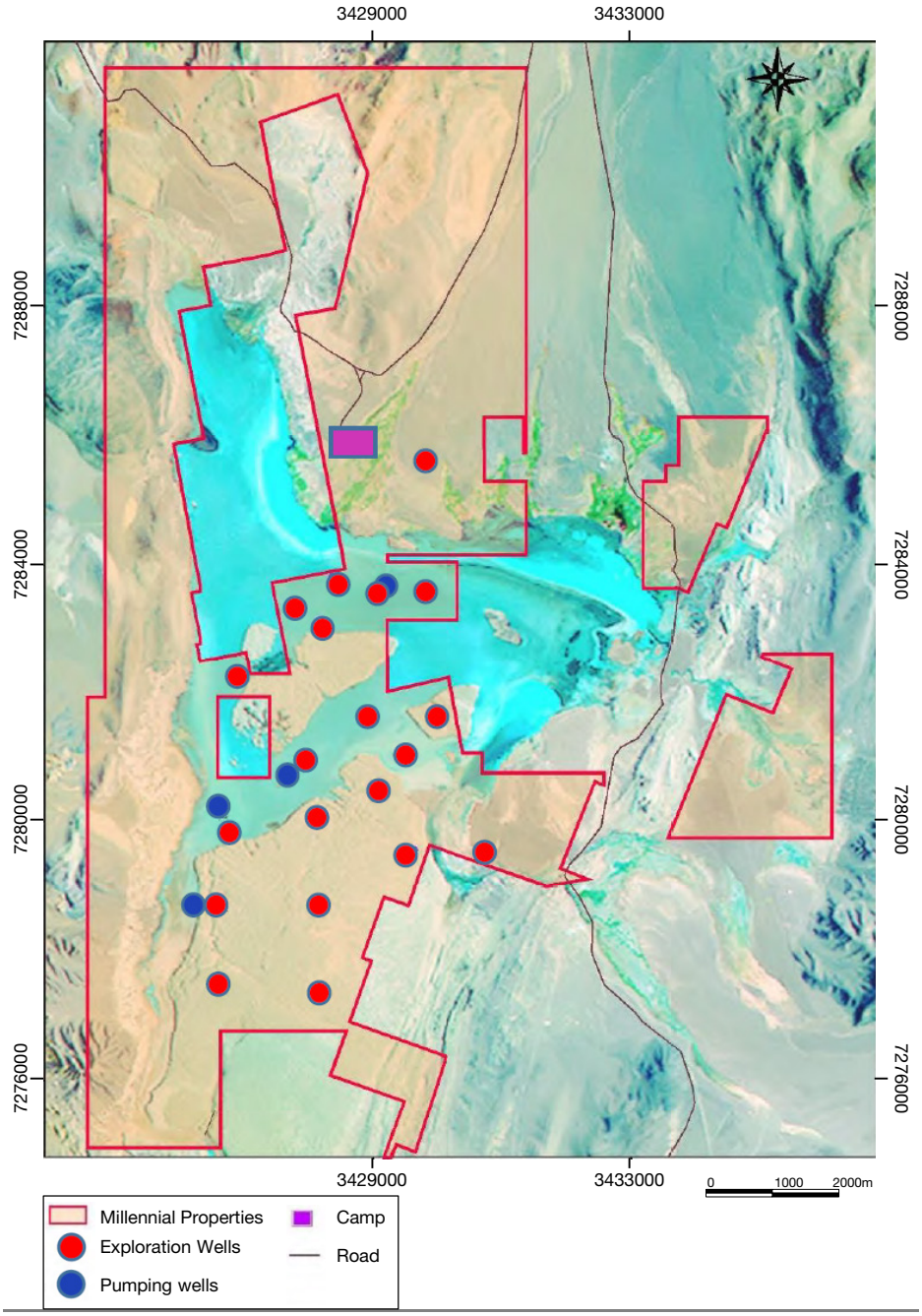


Source: Galan Lithium

Majority ownership of Pastos Grandes salar properties

The company's flagship project covers 8,664 hectares of the Pastos Grandes Salar and has all-weather road access. The other large holder in the salar was the LSC Lithium Corporation that controls 2,683 hectares, but has recently been acquired by Pluspetrol (private oil and gas company in South America) in January for C$111m in cash. LSC Lithium PEA described an operation that would extract brines from the Pastos Grandes salar and transport it over to a nearby salar of Pozuelos for processing.

Figure 37: Pastos Grandes map



Source: company presentation

Current project schedule for Pastos Grandes

The current project schedule for Pastos Grandes is below, but we expect to receive a more detailed forecast for 2019 shortly from the definitive feasibility study.

Figure 38: Project progress

Source: company

Management have strong track records and expertise

Millennial Lithium have assembled a team of management who have both a track record of delivery returns for shareholders and also the technical expertise need to bring a brine operation like Pastos Grandes through development.

Farhad Abasov, MBA – President/CEO/Director: Mr. Abasov founded and managed a number of mining assets with successful exits in the last few years.

- President & CEO of Allana Potash sold to Israel Chemicals Ltd. for $170m in 2015
- Executive Chairman of Rodinia Lithium, developing lithium brine projects in Argentina in 2016
- Co-founder of Potash One acquired by German potash company K+S for $430m in 2010
- Senior Vice President, Strategy, at Energy Metals acquired by Uranium One for $1.8bn in 2007

Ian Scarr, BSc/,MBA – Chief Operating Officer: Mr. Scarr has wealth of experience in lithium brine development and operations.

- Worked at Rio Tinto, industrial minerals including lithium resource development in Serbia (1979-2009)
- Led feasibility work at Sal de Vida lithium brine project (Galaxy Resources, Argentina)
- Completed the Rincon lithium brine project feasibility study (Enirgi, Argentina)
- Iain is a resident of Salta and has established strong relationships in Argentina

Max Missiouk, CPA,CMA - Chief Financial Officer: Mr. Missiouk has served as a CFO and controller for a number of publicly listed resource and venture companies including Allana Potash Corp. and Crocodile Gold Corp.. Mr. Missiouk is a CPA (CMA) and has a post-graduate degree in Banking and Finance Management.

Peter J. MacLean, Ph.D., P.Geo - SVP-Technical Services: Dr. MacLean has over 30 years of exploration and development experience in North America, South America and Africa. Most recently, Dr. MacLean acted as SVP-Exploration of Allana Potash Corp. and directed all exploration and development activities on its flagship Danakhil Potash Project in Ethiopia including managing the Company's Feasibility Study and overseeing pilot solution mining and evaporation pond trials. Dr. MacLean has also worked extensively on projects throughout the Americas and is fluent in Spanish.

Peter Ehren, M.Sc., AusIMM CP Process Consultant: Mr. Ehren has been involved in lithium brines for more than 20 years. He started his involvement in lithium during his master's research at Technical University of Delft where he investigated, on behalf of BHP Minerals, the recovery of lithium from geothermal brine in the Salton Sea trough. On completing his master's thesis Mr. Ehren worked until 2007 at the Salar de Atacama as part of SQM's team of leading evaporation technology experts, rising to the position of R&D Manager. Since that time he has worked in the majority of lithium basins worldwide for numerous projects, notably Orocobre's Salar de Olaroz Project.

Dr. Vijay Mehta, Ph.D Advisory Board: Dr. Mehta brings Millennial 45 years of R&D and manufacturing experience in ore and brine based technology for the recovery of lithium, potash, magnesium and boron, Dr. Mehta has expert insight on lithium process technologies for the development of Li2CO3, LiOH and more than 20 other lithium products.

Risks to the investment case

Meeting contract specifications

The difficulties of producing battery grade lithium to specification for offtake contracts are notorious, as demonstrated by the weakness of realised pricing of the most recent brine producer, Orocobre. The challenges especially increase if you have a multiple customers looking for different qualities.

Management are taking as many de-risking steps as possible with the construction of pilot plant to demonstrate the process in a consistent manner. Recent test work suggests that the projects ramp up of producing only technical grade product too conservative and that it might be possible to produce battery grade from the start, which would have a major impact on realised pricing.

Country political and economic risks

The forth coming elections and the painful economic reforms in Argentina do pose higher country risks than neighbouring Chile, but assuming President wins re-election in October (see section Upcoming Argentinian elections) we believe his commitment to a pro-business and deregulated growth will continue. If Former President Cristina Fernandez de Kirchner and her running partner were to win and implement her historically insular policies, it would make it difficult for foreign investment once again.

Commodity price risks

The rapidly change supply and demand picture for battery grade lithium has shown how volatile prices can be in a short space of time. It is inevitable that these mismatches will continue, but given the expected demand increases longer term, we believe is more likely to be supply that fails to keep up.

Resource risk

The company has recently upgraded its resource to 4,120kt of measured and indicated lithium carbonate equivalent, which at the current planned capacity of 25kt, would give 164 years of mine life.

Figure 39: Updated resource of Pastos Grandes project

Phase II Resource Category	Brine Volume (M m3)	Avg. Li (mg/l)	In situ Li (tonnes)*	Li2CO3 Equivalent (tonnes*)	Avg. K (mg/l)	In situ K (tonnes)*	KCl Equivalent (tonnes)*
Measured	950	446	425,000	2,262,000	4,734	4,508,000	8,597,000
Indicated	860	406	349,000	1,858,000	4,114	3,357,000	6,745,000
M+I	**1800**	**427**	**774,000**	**4,120,000**	**4,440**	**8,045,000**	**15,342,000**
Inferred	350	428	150,000	798,000	4,457	1,559,000	2,973,000

Source: company presentation, average Magnesium/Lithium ratio: 6.2 and Sulphate/Lithium ratio: 19.3

However it is worth noting that with brines there is increased resource risk owing to the fluid nature of the brine and the variable porosity of the different hydrostatigraphic units. As Millennial Lithium does not own the whole salar, it is possible that another company could exploit the resource by pumping brine out of adjacent properties (see section “Majority ownership of Pastos Grandes salar properties”), but then again Millennial can do the same. Over exploiting the resource could encourage more fresh water inflow into the brine and lower the overall grade.

Capex and opex inflation

As with any mining project there is typically inflation in the capital expenditure and operating expectations than initially estimated. For the brine projects this has been especially true with valuable industry knowledge only sitting in the hands of a few individuals.

The mistakes made from the likes of Orocobre, however have been learned and far more conservative cost estimates are being used than Orocobre and Galaxy originally envisaged in their initial feasibility study test work, which expected operating costs of closer to $1,500/t.

The majority of costs are in US$ with domestic workers preferring to be paid in US$ and inputs also priced linked to US$ prices, so to circumvent the issue of rampant inflation.

Figure 40: Financial model for Millennial Lithium (US$m)

Year to Feb		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
		Feb-18	Feb-19	Feb-20	Feb-21	Feb-22	Feb-23	Feb-24	Feb-25	Feb-26	Feb-27	Feb-28	Feb-29	Feb-30	Feb-31	Feb-32	Feb-33	Feb-34	Feb-35
Realised price	$/t						9,500	9,500	11,250	12,300	12,300	12,300	12,300	12,300	12,300	12,300	12,300	12,300	12,300
LCE production	kt	-	-	-	-	-	4,378	8,756	17,512	25,217	25,217	25,217	25,217	25,217	25,217	25,217	25,217	25,217	25,217
Profit and Loss																			
Revenue	$m	-	-	-	-	-	40	81	191	301	301	301	301	301	301	301	301	301	301
Cost of sales inc. G&A	$m	-	-	-	-	-	(15)	(31)	(62)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)	(89)
EBITDA	$m	-	-	-	-	-	25	50	129	212	212	212	212	212	212	212	212	212	212
Depreciation	$m	-	-	-	-	-	(172)	(122)	(82)	(58)	(42)	(30)	(22)	(17)	(13)	(10)	(8)	(7)	(6)
EBIT	$m	-	-	-	-	-	(147)	(72)	47	154	170	182	190	195	199	202	204	205	206
Net interest	$m	-	-	-	-	-	(22)	(22)	(19)	(10)	-	-	-	-	-	-	-	-	-
Profit before Tax	$m	-	-	-	-	-	(169)	(94)	28	144	170	182	190	195	199	202	204	205	206
Taxation	$m	-	-	-	-	-	-	-	-	-	(21)	(46)	(48)	(49)	(50)	(51)	(51)	(51)	(52)
Effective tax rate	%	35%	35%	35%	35%	35%	35%	35%	35%	0%	12%	25%	25%	25%	25%	25%	25%	25%	25%
Attributable profit	$m	-	-	-	-	-	(169)	(94)	28	144	150	136	142	146	149	151	153	154	154
Fully diluted shares in issue	m	83	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172
Fully diluted EPS	$/share						-0.99	-0.55	0.17	0.84	0.87	0.79	0.83	0.85	0.87	0.88	0.89	0.90	0.90
EBITDA margin	%						62%	62%	68%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Cash Flow																			
EBITDA	$m	-	-	-	-	-	25	50	129	212	212	212	212	212	212	212	212	212	212
Tax	$m	-	-	-	-	-	-	-	-	-	(21)	(46)	(48)	(49)	(50)	(51)	(51)	(51)	(52)
Cash flow from operations	$m	-	-	-	-	-	25	50	129	212	191	167	165	163	162	161	161	161	160
Capex	$m	-	-	(45)	(272)	(201)	(5)	11	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Cash flows from investing	$m	-	-	(45)	(272)	(201)	(5)	11	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Issue of equity/royalty	$m	0	0	235															
Net drawdown of debt	$m		0	0	240				-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Interest costs	$m	-	-	-	-	-	(22)	(22)	(19)	(10)	-	-	-	-	-	-	-	-	-
Cash flows from financing	$m	-	-	235	240	-	(22)	(22)	(44)	(35)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
Cash at period beginning	$m	0	0	49	239	208	7	4	43	125	298	461	599	735	869	1,002	1,135	1,267	1,399
Net increase in cash	$m	0	0	190	-32	-201	-3	38	83	173	163	138	136	134	133	133	132	132	132
Cash at period end	$m	0	49	239	208	7	4	43	125	298	461	599	735	869	1,002	1,135	1,267	1,399	1,531
Free cash flow		0	0	-45	-272	-201	20	61	127	208	188	163	161	159	158	158	157	157	157
Balance Sheet																			
Cash	$m	28	37	239	208	7	4	43	125	298	461	599	735	869	1,002	1,135	1,267	1,399	1,531
PP&E	$m	14	24	69	341	542	375	243	163	109	71	44	26	12	3	-3	-8	-11	-13
Assets	$m	44	63	310	550	569	420	326	330	448	573	684	801	923	1,047	1,173	1,301	1,429	1,559
Liabilities	$m	1	1	1	241	260	281	281	256	231	206	181	156	131	106	81	56	31	1
Retained earnings	$m	(66)	(72)	(72)	(72)	(72)	(241)	(335)	(306)	(163)	(13)	123	265	412	561	712	865	1,018	1,173
Share capital and other	$m	109	134	369	369	369	369	369	369	369	369	369	369	369	369	369	369	369	369
Equity	$m	43	62	297	297	297	128	34	62	206	356	492	634	780	929	1,081	1,233	1,387	1,541
Net cash (debt)		**28**	**37**	**239**	**(33)**	**(252)**	**(276)**	**(237)**	**(129)**	**69**	**256**	**419**	**580**	**739**	**897**	**1,055**	**1,212**	**1,369**	**1,531**

Source: Liberum

Appendix

Figure 41: EV lithium demand model

Average battery size by class (kWh)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PHEV	11	11	11	11	11	11	11	11	11	11	11
growth		*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
SRBEV	26	26	26	26	26	26	26	26	26	26	26
growth		*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
LRBEV	70	70	70	70	70	70	70	70	70	70	70
growth		*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Electric Bus & Truck	60	60	62	64	66	67	69	71	72	74	76
growth		*0%*	*3%*	*4%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*

Total installed batteries (GWh)											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PHEV	2.6	3.6	5.4	8.6	12.1	15.7	20.4	26.6	34.6	43.9	54.9
SRBEV	6.5	9.8	14.7	23.4	31.7	42.7	57.7	76.7	101.3	132.7	172.5
LRBEV	3.9	6.0	18.1	34.3	54.9	82.4	123.6	173.0	242.2	339.0	474.7
Electric Bus & Truck	9.8	16.1	24.8	33.5	39.5	45.7	52.4	59.1	66.7	75.2	84.7
Total	22.8	35.5	62.9	100.0	138.2	186.6	254.1	335.4	444.7	590.8	786.7
Average battery size (kW/h per vehicle ex bus)	24.4	24.9	29.4	30.9	32.2	33.5	34.9	35.6	36.4	37.4	38.5
Average battery size (kW/h per vehicle)	32.8	33.9	37.0	37.4	37.7	38.2	38.9	39.0	39.3	39.9	40.7

Kg of LCE per kWh	0.95

LCE consumed by vehicle type (kt)											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PHEV	2.4	3.4	5.1	8.2	11.5	14.9	19.4	25.3	32.8	41.7	52.1
SRBEV	6.2	9.3	13.9	22.3	30.1	40.6	54.8	72.9	96.2	126.0	163.9
LRBEV	3.7	5.7	17.2	32.6	52.2	78.3	117.4	164.3	230.1	322.1	450.9
Electric Bus, truck and other mobility	9.3	15.3	23.6	31.9	37.6	43.4	49.8	56.2	63.3	71.4	80.5
Total	21.6	33.8	59.8	95.0	131.3	177.2	241.4	318.6	422.4	561.2	747.4
growth		12.1	26.0	35.2	36.3	45.9	64.2	77.2	103.8	138.8	186.2

LCE consumed by vehicle type (%)											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PHEV	11%	10%	9%	9%	9%	8%	8%	8%	8%	7%	7%
SRBEV	29%	27%	23%	23%	23%	23%	23%	23%	23%	22%	22%
LRBEV	17%	17%	29%	34%	40%	44%	49%	52%	54%	57%	60%
Electric Bus & Truck	43%	45%	39%	34%	29%	25%	21%	18%	15%	13%	11%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Liberum

Figure 42: Segment consumption in LCE tonnes

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Segment demand in LCE tonnes (EV 14m lead)												
Other industrual	46,000	112,943	115,248	117,600	120,000	122,400	124,848	127,345	129,892	132,490	135,139	137,842
growth (%)		*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
Batteries (grid storage)	1,000	3,430	4,900	7,000	10,000	13,000	16,900	21,970	28,561	37,129	48,268	62,749
growth (%)		*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*
Batteries (consumer)	27,000	34,628	38,475	40,500	45,000	49,500	54,450	59,895	65,885	72,473	79,720	87,692
growth (%)		*10.0%*	*5.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
Batteries (Evs inc. bus)	18,000	21,613	33,753	59,785	94,959	131,299	177,231	241,426	318,643	422,439	561,232	747,410
growth (%)		*20%*	*56%*	*77%*	*59%*	*38%*	*35%*	*36%*	*32%*	*33%*	*33%*	*33%*
Total	**92,000**	**172,613**	**192,376**	**224,885**	**269,959**	**316,199**	**373,429**	**450,636**	**542,981**	**664,531**	**824,360**	**1,035,693**
		88%	*11%*	*17%*	*20%*	*17%*	*18%*	*21%*	*20%*	*22%*	*24%*	*26%*

Segment demand in LCE tonnes (EV 20m lead)												
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Electric vehicles (BEV, PHEV, bus, scooter)	18,000	21,613	33,753	59,785	94,959	154,265	209,328	280,034	370,541	491,836	654,321	859,570
Consumer batteries	27,000	34,628	38,475	40,500	45,000	49,500	54,450	59,895	65,885	72,473	79,720	87,692
Grid storage	1,000	3,430	4,900	7,000	10,000	13,000	16,900	21,970	28,561	37,129	48,268	62,749
Other industrial	46,000	112,943	115,248	117,600	120,000	122,400	124,848	127,345	129,892	132,490	135,139	137,842
Total	**92,000**	**172,613**	**192,376**	**224,885**	**269,959**	**339,165**	**405,526**	**489,244**	**594,879**	**733,928**	**917,449**	**1,147,853**

Source: Liberum

Figure 43: Longer dated potential lithium projects

Company	Project	Country	Product
Enirgi Group	Salar del Rincon	Argentina	Carbonate
Aberdeen Int., Lithium X	Sal de los Angeles	Argentina	Carbonate
NRG Metals	Hombre Muerto	Argentina	Carbonate
Eramet	Centenario-Ratones (Cuenca)	Argentina	Carbonate
Keliber Oy	Keliber	Finland	Carbonate
European Metals	Cinovec	Czechia	Carbonate
State owned	Uyuni	Bolivia	Carbonate
Infinity Lithium	San Jose	Spain	Hydroxide
Critical Elements Group	Rose Lithium	Canada	Carbonate
Bacanora Minerals	Sonora	Mexico	Carbonate
European lithium	Wolfsburg	Austria	Hydroxide
Savannah Res	Mino do Barroso	Portugal	Hydroxide
Galan Lithium	Hombre Muerto	Argentina	Carbonate
Orocobre/Advantage Lithium	Cauchari	Argentina	Carbonate
Lithium Americas	Kings Valley (Lithium Nevada)	USA	
Ultra Lithium	Georgia Lake	Canada	Concentrate
Frontier Lithium	PAK Lithium	Canada	Concentrate
South Leduc	Leduc	Canada	Carbonate
Empire Metals Corp.	Fox Creek	Canada	Carbonate
Avalon Rare Metals	Separation Rapids	Canada	Carbonate
AVZ Minerals	Manono	DRC	Carbonate
European Lithium	Wolfsberg	Austria	Hydroxide
Bikita Minerals	Bikita	Zimbabwe	
Birimian Gold	Goulamina	Mali	Hydroxide
Tawana Resources	Cowan Lithium	Australia	
Rio Tinto	Jadar	Serbia	Carbonate

Source: company

Disclaimer

This communication has been issued in the UK by Liberum Capital Limited (LCL) which is authorised and regulated by the Financial Conduct Authority ("FCA") and is a member of The London Stock Exchange PLC. The registered address of Liberum Capital Limited is Ropemaker Place, 25 Ropemaker Street, London EC2Y 9LY. Telephone: 020 3100 2000.

This report has been prepared by its author(s) as non-impartial research in relation to Company (the "Company"), as such that it is inappropriate to characterise it as independent investment research, as it has not been prepared in accordance with UK legal requirements designed to promote the independence of investment research. Therefore, even if it contains a research recommendation, it should be treated as a marketing communication.

The individuals who prepared this communication may be involved in providing other financial services to the company or companies referenced herein or to other companies who might be said to be competitors of the company or companies referenced herein. As a result, both Liberum Capital Limited ("LCL") and the individual employees who prepared this communication may have responsibilities that conflict with the interests of the persons who receive this communication and information may be known to LCL or persons connected with it which is not reflected in this communication.

LCL has put in place procedures, systems and controls to identify, to prevent (where this is possible) conflicts of interest and also has a conflicts management policy relating to its research and marketing communication activities, which is available on its website, www.liberum.com. In addition, a list of items which could create a conflict of interest and other material interests in relation to research material is set out on LCL's website (see "Disclosures" below).

This communication is provided for information purposes only and should not be regarded as an offer or solicitation to buy or sell any security or other financial instrument. This communication has no regard for the specific investment objectives, financial situation and needs of any specific person or entity. LCL and/or its officers, directors and employees may have or take positions in securities of companies mentioned in this communication (or in any related investment) and may from time to time dispose of any such positions and may also provide corporate finance or underwriting services for or relating to those companies, for which it is remunerated. LCL analysts, including the author of this report, receive compensation based on a number of factors including the quality of research, client feedback, firm profitability and normal competitive factors. This communication is based on materials and sources that are believed to be reliable; however, they are not independently verified and are not guaranteed as being accurate. All expressions of opinions, projections, forecasts and estimates constitute a judgment and are those of the author and the research department of LCL only, and should not be relied upon and are subject to change without notice. The content of this communication may have been disclosed to the company referenced herein prior to dissemination in order to verify factual accuracy, however the Company takes no responsibility for the accuracy or otherwise of any opinion, projection, forecast or estimate contained within this report.

While LCL endeavours to update its research reports from time to time it is under no obligation to do so. LCL shall not be liable for any direct or indirect damages, including lost profits, arising in any way from use of all or any of the information contained in this communication.

LCL may have issued other reports or communications that are inconsistent with and reach different conclusions from, the information contained in this communications. Those communications reflect the different assumptions, views and analytical methods of the individuals that prepared them.

This communication is not guaranteed to be a complete statement or summary of any securities, markets, reports or developments referred to therein.

No representation or warranty either expressed or implied, is made nor responsibility of any kind is accepted by LCL, its directors, officers, employees or agents either as to the accuracy or completeness of any information contained in this communication nor should it be relied on as such.

This communication is provided with the understanding that LCL is not acting in a fiduciary capacity and it is not a personal recommendation to you.

The investments discussed in this communication may not be eligible for sale in some states or countries and may not be suitable for all investors.

Investors should make their own investment decisions based upon their own financial objectives and financial resources and, if in any doubt, should seek advice from an investment advisor.

Past performance is not necessarily a guide to future performance. The stated price of any securities mentioned herein will generally be as at the end of the business day immediately prior to the publication date on this communication unless otherwise stated and is not a representative that any transaction can be effected at this price.

This communication is confidential and may not be re-distributed, retransmitted or disclosed, in whole or in part, or in any manner, without the express written consent of LCL.

For more information on models, please contact the Analyst.

In the United Kingdom

This communication is for the use of (a) Professional Clients and Eligible Counterparties (such terms as defined by the rules of the FCA) of LCL and (b) other persons who are not clients of LCL who have expressed interest in receiving it and who are investment professionals (persons having professional experience in matters relating to investments, as defined in Article 19(5) or Article 49(2)(a) to (d) (high net worth companies, unincorporated associations etc) of the Financial Services and Markets Act 2000 (Financial Promotions) Order 2005 (as amended) and any other persons to whom this communication for the purposes of sections 21 of the Financial Services and Markets Act 2000 can otherwise lawfully be communicated).

For the purpose of clarity, this communication is not intended for and should not be relied upon by Retail Clients (as defined by the rules of the Financial Conduct Authority).

The content includes data provided by FTSE International Limited ("FTSE") © FTSE 2013. "FTSE®" is a trade mark of the London Stock Exchange Group companies and is used by FTSE under licence. All rights in the FTSE indices and / or FTSE ratings vest in FTSE and / or its licensors. Neither FTSE nor its licensors accept any liability for any errors or omissions in the FTSE indices and / or FTSE ratings or underlying data. No further distribution of FTSE data is permitted without FTSE's express written consent.

For EU investors

This communication is being distributed to and is directed only at persons in member states of the European Economic Area ("EEA") who are "qualified investors" within the meaning of article 2(1)(e) of the prospectus directive (directive 2003/71/EC and any amendments thereto (including directive 2010/73/EU to the extent implemented in the relevant EEA member state) and any relevant implementing measures in each relevant EEA member state) ("qualified investors"). Any person in the EEA who receives this communication will be deemed to have represented and agreed that it is a qualified investor. Any such recipient will also be deemed to have represented and agreed that it has not received this communication on behalf of persons in the EEA other than qualified investors or persons in the United Kingdom and other member states (where equivalent legislation exists) for whom the investor has authority to make decisions on a wholly discretionary basis. LCL and its affiliates, will rely upon the truth and accuracy of the foregoing representations and agreements. Any person in the EEA who is not a qualified investor should not act or rely on this communication or any of its contents.

For US Investors

Analyst Certification: The analyst(s) who prepared this report hereby certifies that all of the views expressed in this report accurately reflect his / her personal views about the subject securities or issuers. No part of his/her compensation was, is, or will be directly or indirectly related to the inclusion of specific recommendations or views in this report.

The analyst(s) responsible for preparing research report received compensation that is based upon various factors, including total revenues of Liberum Inc. and its affiliates, a portion of which are or have been generated by investment banking activities of Liberum Inc. and its affiliates. LCL may make a market in the securities of the issuer and may act as principal with regard to sales and purchases of this security.

Any U.S. recipient of this report that is not a registered brokerdealer or a bank acting in a broker or dealer capacity and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report, should contact and place orders with Liberum Inc.

For Canadian Investors

This information is not, and under no circumstances is to be construed as, an advertisement or a public offering of the securities described herein in Canada or any province or territory thereof. Under no circumstances is this information to be construed as an offer to sell securities or as a solicitation of an offer to buy securities in any jurisdiction of Canada. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the registration requirement in the relevant province or territory of Canada in which such offer or sale is made. This information is not, and under no circumstances is it to be construed as, a prospectus, an offering memorandum, an advertisement or a public offering of any securities in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon these materials, the information contained herein or the merits of the securities described herein and any representation to the contrary is an offence. If you are located in Canada, this information has been made available to you based on your representation that you are an "accredited investor" as such term is defined in National Instrument 45-106 Prospectus Exemptions and a "permitted client" as such term is defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Under no circumstances is the information contained herein to be construed as investment advice in any province or territory of Canada nor should it be construed as being tailored to the needs of the recipient. Canadian recipients are advised that Liberum Capital Inc., its affiliates and its authorized agents are not responsible for, nor do they accept, any liability whatsoever for any direct or consequential loss arising from any use of this research report or the information contained herein.

For Swiss Investors

This publication is intended to be distributed to professional investors in circumstances such that there is no public offer. This publication does not constitute a prospectus within the meaning of Articles 652a and 1156 of the Swiss Code of Obligations.

Other countries

Laws and regulations of other countries may also restrict the distribution of this report. Persons in possession of this communication should inform themselves about possible legal restrictions and observe accordingly.

Disclosures

Please refer to www.liberum.com/legal for regulatory disclosures.

LIBERUM

Research

Alternatives

Conor Finn
+44 (0)20 3100 2257
conor.finn@liberum.com
Myrto Charamis
+44 (0)20 3100 2266
myrto.charamis@liberum.com

Business Services, Building, Leisure & Travel

Building Materials, Equipment Hire & Housebuilders

Charlie Campbell
+44 (0)20 3100 2090
charlie.campbell@liberum.com
Marcus Cole
+44 (0)20 3100 2092
marcus.cole@liberum.com

Support Services & Special Situations

Joe Brent
+44 (0)20 3100 2272
joe.brent@liberum.com
Sanjay Vidyarthi
+44 (0)20 3100 2278
sanjay.vidyarthi@liberum.com
James Allen
+44 (0)20 3100 2088
james.allen@liberum.com

Transport

Gerald Khoo
+44 (0)20 3100 2195
gerald.khoo@liberum.com

Leisure

Anna Barnfather
+44 (0)20 3100 2176
anna.barnfather@liberum.com
Andrew Wilkinson
+44 (0)20 3100 2068
andrew.wilkinson@liberum.com

Consumer

Consumer Discretionary

Adam Tomlinson
+44 (0)20 3100 2174
adam.tomlinson@liberum.com
Tom Musson
+44 (0)20 3100 2067
tom.musson@liberum.com

Consumer Goods

Robert Waldschmidt
+44 (0)20 3100 2085
robert.waldschmidt@liberum.com
Anubhav Malhotra
+44 (0)20 3100 2197
anubhav.malhotra@liberum.com
Nico von Stackelberg
+44 (0) 20 3100 2074
nico.vonstackelberg@liberum.com

Roving

Wayne Brown
+44 (0) 20 3100 2082
wayne.brown@liberum.com

Financials

Financial Services

Ben Williams
+44 (0)20 3100 2274
ben.williams@liberum.com
Jamie Donald
+44 (0)20 3100 2164
jamie.donald@liberum.com
Rahim Karim
+44 (0)20 3100 2271
rahim.karim@liberum.com

Healthcare

Graham Doyle
+44 (0)20 3100 2095
graham.doyle@liberum.com
Alistair Campbell
+44 (0)20 3100 2096
alistair.campbell@liberum.com

Industrials

Capital Goods

Daniel Cunliffe
+44 (0)20 3100 2086
daniel.cunliffe@liberum.com
Ryan Gregory
+44 (0)20 3100 2071
ryan.gregory@liberum.com
Christian Hinderaker
+44 (0)20 3100 2275
christian.hinderaker@liberum.com

Real Estate

David Brockton
+44 (0)20 3100 2243
david.brockton@liberum.com
James Ashley
+44 (0)20 3100 2167
james.ashley@liberum.com

Resources

Agriculture & Nutrition

Sophie Jourdier
+44 (0)20 3100 2072
sophie.jourdier@liberum.com

Mining

Richard Knights
+44 (0)20 3100 2087
richard.knights@liberum.com
Ben Davis
+44 (0)20 3100 2083
ben.davis@liberum.com

Speciality Chemicals & New Energy

Adam Collins
+44 (0)20 3100 2075
adam.collins@liberum.com
Gustav Lindahl
+44 (0)20 3100 2192
gustav.lindahl@liberum.com

Technology, Media & Telecommunications

Media

Ian Whittaker
+44 (0)20 3100 2089
ian.whittaker@liberum.com
Harry Read
+44 (0)20 3100 2093
harry.read@liberum.com

SMID Technology & Services

Andrew Bryant
+44 (0)20 3100 2277
andrew.bryant@liberum.com

Technology

Janardan Menon
+44 (0)20 3100 2076
janardan.menon@liberum.com
Alexandre Schmidt
+44 (0)20 3100 2268
alexandre.schmidt@liberum.com

Strategy & Stock Selection

Andrew Coury
+44 (0)20 3100 2091
andrew.coury@liberum.com
Mark James
+44 (0)20 3100 2084
mark.james@liberum.com

Support

Olivia Honychurch
+44 (0)20 3100 2081
olivia.honychurch@liberum.com

Convertibles

Simon Smith
+44 (0)20 3100 2171
simon.smith@liberum.com
Richard Tomblin
+44 (0)20 3100 2172
richard.tomblin@liberum.com

Equity Sales – London

Julian Collett (Head of Equity Sales)
+44 (0)20 3100 2113
julian.collett@liberum.com
David Parsons (Head of Equities)
+44 (0)20 3100 2125
david.parsons@liberum.com
Edward Blair
+44 (0)20 3100 2117
edward.blair@liberum.com
Nicholas Lee
+44 (0)20 3100 2129
nicholas.lee@liberum.com
Oliver Baxendale
+44 (0)20 3100 2193
oliver.baxendale@liberum.com
Gerard O'Doherty
+44 (0)20 3100 2097
gerard.odoherty@liberum.com
Lisa Tugwell
+44 (0)20 3100 2249
lisa.tugwell@liberum.com
Alistair Smallwood
+44 (0)20 3100 2124
alistair.smallwood@liberum.com
Sebastian Fernandez
+44 (0)20 3100 2242
sebastian.fernandez@liberum.com

Specialist Sales

Diversified Financials

Steve Keeling
+44 (0)20 3100 2120
steve.keeling@liberum.com

Real Estate

John Mozley
+44 (0)20 3100 2115
john.mozley@liberum.com

Consumer & Leisure

Lucy Sharma
+44 (0)20 3100 2236
lucy.sharma@liberum.com

Alternative Funds

Anastasia Mikhailova
+44 (0) 20 3100 2259
anastasia.mikhailova@liberum.com
Andrew Davies
+44 (0) 20 3100 2269
andrew.davies@liberum.com
Jack Kershaw
+44 (0) 20 3100 2253
jack.kershaw @liberum.com

Equity Sales – New York

Mark Godridge
+1 212 596 4823
mark.godridge@liberum.com
Julian Plant
+1 212 596 4824
julian.plant@liberum.com
Peter Penha
+1 212 596 4808
peter.penha@liberum.com
Sarah Port
+1 212 596 4818
sarah.port@liberum.com
John Churchill
+1 212 596 4807
john.churchill@liberum.com

Sales Trading

Graham Smith (Head of Execution)
+44 (0)20 3100 2101
graham.smith@liberum.com
Dominic Lowres (Head of Execution Strategy)
+44 (0)20 3100 2103
dominic.lowres@liberum.com
Nina Dixon
+44 (0)20 3100 2109
nina.dixon@liberum.com
Nick Worthington
+44 (0)20 3100 2106
nick.worthington@liberum.com
David Thompson
+44 (0)20 3100 2062
david.thompson@liberum.com
Stephen Jury
+44 (0)20 3100 2107
stephen.jury@liberum.com
Scott Leslie
+1 212 596 4813
scott.leslie@liberum.com
Mark O'Hara (Head of Sales Trading)
+44 (0)20 3100 2061
mark.o'hara@liberum.com
Scott Briant
+44 (0)20 3100 2118
scott.briant@liberum.com
William Wood
+44 (0)20 3100 2119
william.wood@liberum.com
Tim Mayo (Execution)
+44 (0) 20 3100 2127
tim.mayo@liberum.com

Trading

Giles Johnston (Head of Trading)
+44 (0)20 3100 2203
giles.johnston@liberum.com
Simon Warrener
+44 (0)20 3100 2108
simon.warrener@liberum.com

Market Making

STX 77440
+44 (0)20 3100 2200