

RECOMMENDATIONS

Rating	Buy ▲
Risk	High
Price Target	\$0.56
Share Price	\$0.33

SNAPSHOT

Monthly Turnover	\$186.3mn
Market Cap	\$572mn
Shares Issued	1,788.1mn
52-Week High	\$0.58
52-Week Low	\$0.03
Sector	Materials

BUSINESS DESCRIPTION

Galaxy Resources is a developer and explorer of lithium minerals. The company started in the lithium industry in 2011 with production from Mt Cattlin and conversion of lithium in China at Jiangsu, production problems and costs led to its closure and subsequent divestment. GXY also acquired Lithium One in 2012 which led to it getting control of Sal de Vida and James Bay.

12-MONTH PRICE & VOLUME



RESEARCH ANALYST

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Disclosure

The author owns no shares in GXY.

Galaxy Resources (GXY)

COMPANY REPORT – INITIATION OF COVERAGE

On the verge

- **Initiation of coverage:** We initiate coverage of Galaxy Resources with a BUY recommendation and a price target of \$0.56 per share. We rate the stock as high risk as a significant portion of the value of the company lies in Mt Cattlin, which is not producing, and two uncommitted projects that will not be in commercial production until 2020 at the earliest.
- **Base earnings and development upside:** The takeover of General Mining (GMM) provides GXY with 100% of the earnings derived from the Mt Cattlin spodumene mine. Mine cash flow will assist in funding the remaining studies for the Sal de Vida (SdV) brine project and demonstration plant. The acquisition of GMM will once again see GXY with 100% ownership of the James Bay property in Canada. The project pipeline now looks like: production from Mt Cattlin in Dec Qtr 2016; SdV demo plant producing in late 2018; potentially James Bay spodumene in late 2019; and then full production from SdV in late 2021.
- **A sense of reality:** Galaxy Mining was listed in 2007 to explore and potentially develop the Mt Cattlin Lithium and Tantalum project (lithium carbonate prices had just gone over US\$5,000/t). By 2009, GXY's goal had changed to being a global leader (i.e. the 4th largest LCE producer, 2nd largest spodumene producer and the largest and lowest cost LCE producer in China) at the same time as amassing net debt close to A\$200m and a limited means of servicing it. Asset sales brought net debt down A\$20m and delivered a more manageable development pipeline given GXY's capitalisation.
- **Investment thesis and risks:** GXY offers investors exposure to lithium through a development pipeline that includes spodumene exploration in Canada, brine development in Argentina and spodumene production in Australia. Recent guidance from the company is indicative of a more measured and less rushed project delivery. However, the six month delay in restarting Mt Cattlin along with the 50% increase in restart capex has left GXY with a potential cash shortfall. Directors have indicated they would arrange to provide working capital until operations become cash flow positive. The six month delay in its restart and the subsequent cash position is disappointing but should be a positive if it means doing things right this time.
- **Valuation and target price:** Our valuation of GXY is \$0.74 per share. The components of the valuation are the NPV of Mt Cattlin, a risked valuation of Sal de Vida based on our NPV and a composite value for James Bay based on the market multiples and cash flow potential. Our target price is \$0.56 per share.

INVESTMENT SUMMARY

Year End: 31 December		2014 (A)	2015 (A)	2016 (E)	2017 (E)	2018 (E)
Revenue	\$mn	0	0	17	137	230
EBITDA	\$mn	-10.2	-9.4	7.4	68.3	129.1
EBIT	\$mn	-16.9	-9.8	3.9	60.5	121.0
Reported Profit	\$mn	-54.7	54.9	-0.1	39.5	81.3
Adjusted Profit	\$mn	-29.2	-15.6	-0.1	39.5	81.3
EPS (Reported)	¢	-5.1	4.3	0.0	2.2	4.5
EPS (Adjusted)	¢	-2.7	-1.2	0.0	2.2	4.5
EPS Growth	%	N/A	N/A	N/A	N/A	105.6
PER (Reported)	x	N/A	7.5	N/A	14.9	7.2
PER (Adjusted)	x	N/A	N/A	N/A	14.9	7.2
Dividend	¢		0.0	0.0	0.0	0.0
Yield	%		0.0	0.0	0.0	0.0
Franking	%	0	0	0	0	0

Financial summary

Galaxy Resources

Analyst:	Warren Edney
Date:	23-Sep-16
Share Price (\$A):	\$0.33
Market Cap (A\$m):	\$596 including all shares to be issued for GMM
EV (A\$m)	\$648
Year End:	30 June

Rating:	Buy
Price Target:	\$0.56
Upside/(Downside):	71%
Valuation:	\$0.74
Risk:	High

KEY RATIOS	CY16E	CY17E	CY18E	CY19E	CY20E
NPAT - Reported	-0.1	39.5	81.3	48.9	28.8
NPAT - Attributable	-0.1	39.5	81.3	48.9	28.8
EPS - Adjusted	0.0	2.2	4.5	2.7	1.6
EPS Growth (%)	(97%)	(5,135%)	106%	(40%)	(41%)
P/E (x)	(759.4)	15.1	7.3	12.2	20.7
CFPS (A Cents)	0.4	2.8	5.2	3.8	6.2
P/CF (x)	80.6	11.6	6.3	8.6	5.3
DPS (A Cents)	-	-	-	-	-
Franking (%)	0%	0%	0%	0%	0%
Dividend Yield (%)	-	-	-	-	-
Payout Ratio (%)	-	-	-	-	-
FCF Yield (%)	-4%	2%	10%	-49%	-2%
EV/EBIT (x)	478.0	30.7	15.4	22.7	23.6
EV/EBITDA (x)	251.2	27.2	14.4	20.6	14.8

VALUATION SUMMARY					
	WACC	8.9%	A\$m	A\$/Share	Risked
Mt Cattlin			767	0.42	0.42
Sal de Vida			514	0.28	0.14
James Bay			109	0.06	0.03
Operations			1,390	0.77	0.60
Corporate			(9)	(0.00)	(0.00)
Exploration			-	-	-
Net Cash / (Debt)			(51)	(0.03)	(0.03)
Total Valuation			1,330	0.74	0.56

ASSUMPTIONS	CY16E	CY17E	CY18E	CY19E	CY20E
Australian Dollar (AUD/USD)	0.73	0.72	0.72	0.73	0.73
Spodumene conc (US\$/t)	600	625	625	520	549
Spodumene conc (A\$/t)	817	868	868	713	750
LiCO (US\$/t)	9,000	7,500	7,500	7,750	8,000
Tantalite (US\$/t)	60	65	70	75	80
Tantalite (A\$/t)	82	90	97	103	109

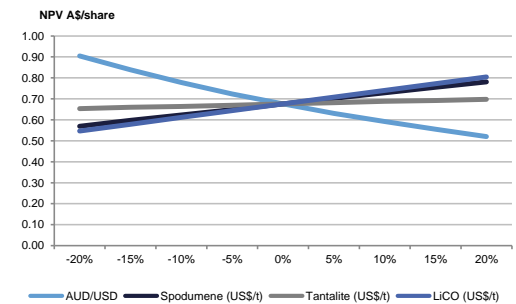
PRODUCTION & COSTS	CY16E	CY17E	CY18E	CY19E	CY20E
Mt Cattlin - spodumene (kt)	18	135	224	224	224
Mt Cattlin - tantalite (t)	9	97	167	167	167
Spodumene - FOB Cost A\$/t	477	504	447	475	427
Sal de Vida - LCE (kt)	0.0	0.0	0.1	0.8	7.5
LCE - FOB cost US\$/t after credits	0	0	0	0	6,680

PROFIT & LOSS (A\$m)	CY16E	CY17E	CY18E	CY19E	CY20E
Operating Revenue	16.6	137.1	230.3	197.5	290.1
Other Revenue	-	-	-	-	-
Total Revenue	16.6	137.1	230.3	197.5	290.1
Operating Expenses	(9)	(68)	(100)	(106)	(164)
Corporate/Other Expenses	(1)	(1)	(1)	(1)	(1)
EBITDA	7	68	129	90	125
Depreciation & Amortisation	(4)	(8)	(8)	(8)	(46)
Exploration/write-offs	(0)	-	-	-	-
EBIT	4	61	121	82	79
Net Interest / (Expense)	(3)	(4)	(5)	(12)	(38)
NPBT	1	56	116	70	41
Income Tax Expense	(1)	(17)	(35)	(21)	(12)
NPAT - Adjusted	(0)	40	81	49	29
Significant Items	-	-	-	-	-
NPAT - Reported	(0)	40	81	49	29

CASH FLOW (A\$m)	CY16E	CY17E	CY18E	CY19E	CY20E
Cash Flow from Ops	7	51	94	69	113
Capex - Development & Sustaining	(32)	(41)	(34)	(359)	(128)
Free Cash Flow	(25)	11	61	(290)	(15)
Cash Flow From Investing	(292)	(41)	(33)	(355)	(127)
Cash Flow From Financing	267	6	15	233	25
Net Cash Flow	(18)	17	76	(53)	11

BALANCE SHEET (A\$m)	CY16E	CY17E	CY18E	CY19E	CY20E
Cash	-13.1	3.5	80.0	26.7	37.9
PP&E/Development/Exploration	154.1	187.1	212.7	563.3	644.4
Assets	150.2	199.8	301.9	599.2	691.6
Debts	38.3	48.4	69.2	317.6	421.2
Liabilities	46.9	56.9	77.7	326.2	429.7
Equity	363.0	402.6	483.9	532.8	561.6
Net Debt / (Cash)	51.4	44.9	-10.8	290.9	383.2
Gearing (%) - Net Debt / (Net Debt + Equity)	12%	10%	-2%	35%	41%

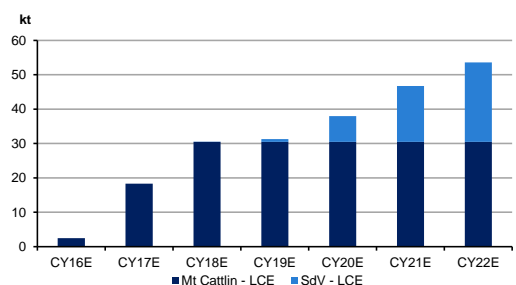
VALUATION SENSITIVITY



EARNINGS SENSITIVITY

AUD/USD		CY16E	CY17E	CY18E	CY19E
NPAT A\$m		-0.1	39.5	81.3	48.9
10%		-0.9	-7.8	-13.3	-11.2
+1c		-0.1	-1.1	-1.9	-1.5
Spodumene		CY16E	CY17E	CY18E	CY19E
NPAT A\$m		-0.1	39.5	81.3	48.9
10%		0.9	7.4	12.6	10.7
\$100/t		1.6	11.9	20.1	20.6
LiCO		CY16E	CY17E	CY18E	CY19E
NPAT A\$m		-0.1	39.5	81.3	48.9
10%		0.0	0.0	0.0	0.0
\$100/t		0.0	0.0	0.0	0.0

LCE PRODUCTION - equity



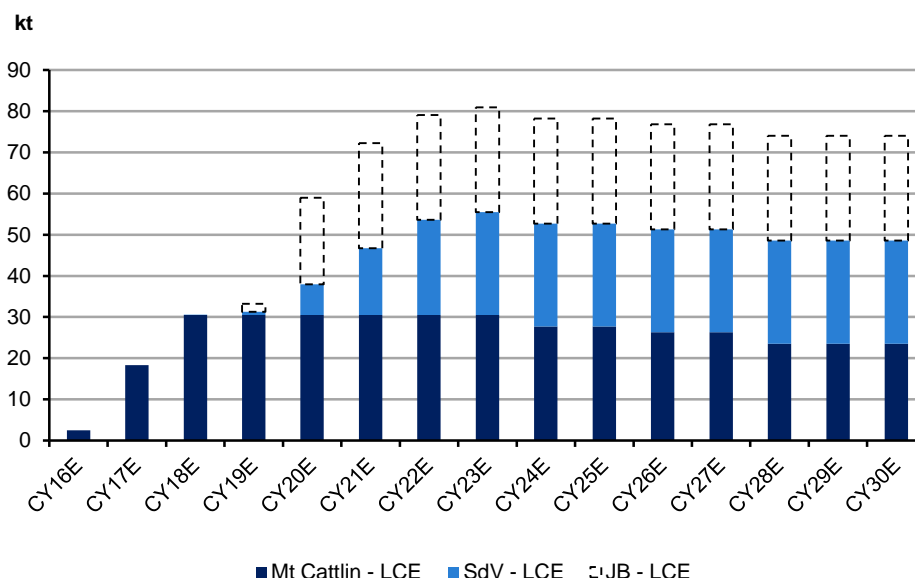
The development play with some production

Key points

- The takeover of General Mining:** delivers 100% production and development options to GXY, while cash flow from Mt Cattlin will provide a means of funding development studies and exploration. Having 100% ownership of the projects also enables GXY to more easily fund project development through divestment or advances on sales.
- Mt Cattlin slightly disappointing:** originally scheduled for production in July 2016, GXY now expects to begin production in December Quarter 2016 and make its first shipment in December. The refurbishment requirements appear to have been more extensive than previously anticipated due to the inclusion of higher capacity components and the associated engineering. Rather than only parts of the plant being rated at 1.6mtpa, the whole plant will be able to process at a 1.6mtpa rate rather than going from 800ktpa to 1mtpa to 1.6mtpa (capex has gone from \$15m to \$22.4m to achieve this and used up a portion of the sales advance). Initial concentrate yields have also been reduced from a targeted 75% to 50%. GXY still hopes to get to 70% or more but this is now likely to occur over a 12-24 month period. This means that costs per unit of saleable product will be higher than we had originally forecast and the cash flow position will be tight until economies of scale are achieved. We forecast commercial production from Mt Cattlin to occur in the first quarter of 2017.
- Sal de Vida funding in place for a period:** The cash generated from Mt Cattlin should be sufficient to fund work on the Sal de Vida project to a point where GXY needs to commit to the building of a commercial plant. We have assumed that US\$30m will be required to construct the evaporation ponds and a 1200tpa demonstration plant at the salar. Some form of financing for the US\$376m commercial project will be required, potentially a mix of debt and equity, or even a partial sell down to a consumer post the completion of the demonstration plant. In the interim we have assumed SdV will be funded through debt and cash flow from operations.
- James Bay is not dissimilar to Mt Cattlin:** We expect GXY will focus on getting Mt Cattlin to commercial production and having it perform in line with budget and only minimal work will be carried out on James Bay until then. The lessons learnt at Mt Cattlin will be directly applicable to James Bay. We have valued James Bay two ways: 1) on a \$/t of resource basis using spodumene peers; and 2) an NPV based on economics derived by Nemaska for its Whabouchi mine proposal in Quebec. James Bay is a long way from being developed but the chart below shows the potential contribution to LCE production the mine could have on GXY's total output.

There will be a mismatch on cash flow and profit in the first six months of operations as pre-committed payments have already been spent.

FIG.1: PRODUCTION OPTIONS IN THE GXY PORTFOLIO (LCE)



Source: Baillieu Holst

Mount Cattlin

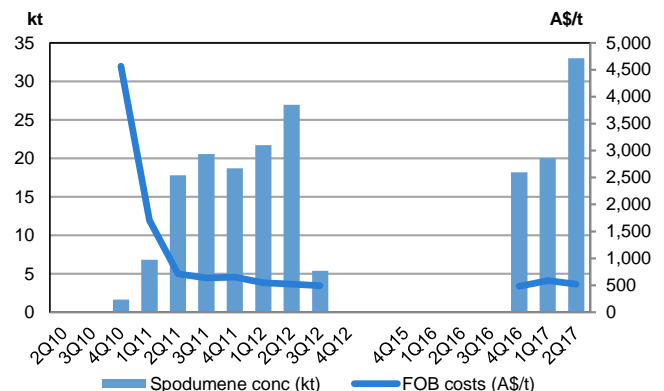
- The Mt Cattlin open pit mine and gravity separation plant was operated by GXY in 2011 and 2012. It was closed and put on care & maintenance in February 2013 when the mine had built up a stockpile of spodumene in excess of Jiangsu's ability to consume it. The costs of production also exceeded the selling price of spodumene at the time, hence there was not an option for previous management to continue production and sell the spodumene into the market to other converters as it meant selling it at a loss. The decision to suspend operations at Mt Cattlin in early 2013 coincided with a period the old Galaxy came under a lot of financial stress, with debt on the balance sheet and negligible cash flow.
- The operations were to be restarted by General Mining (GMM) as part of a sale agreement with GXY along with an expenditure of A\$15m to refurbish and modify the plant. The takeover of GMM in August saw GXY attain 100% ownership of the project and sole responsibility for funding and carrying out the capital works program.

FIG.2: LOCATION PLAN



Source: GXY

FIG.3: LEAVING THE PAST BEHIND



Source: GXY, Baillieu Holst

- GMM had indicated that the contents of the old tailings dam would provide the first ore source for the mill and enable fine tuning of the fines recovery circuit and the mica removal circuit, both of which were major issues in the 2011-12 operations. The coarse ore circuit would then be commissioned with ore from the ROM stockpile. However, this plan was changed with the fines circuit commissioned and shut and the coarse ore circuit was upgraded and modified to allow throughput at 1.6mtpa. The processing of tailings has been postponed and the capital expenditure has increased ~50% to A\$22.4m.

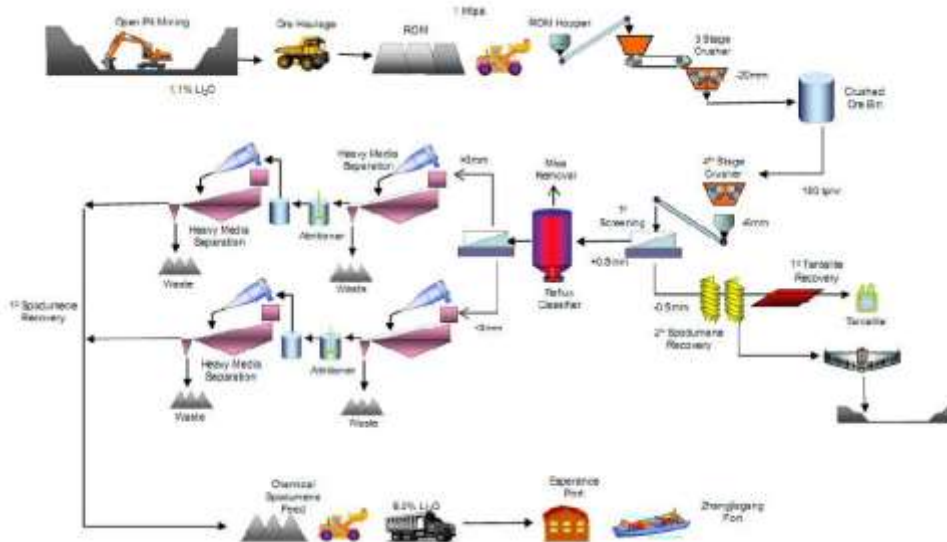
What's different this time?

- **Quality improvement:** reduction in the mica content to below 5% versus the range of 15-20% mica levels in the earlier production phase.
- **Cost improvement:** improving the plants effective yield of spodumene concentrate from 50-55% to 70-75% will have a direct, and potentially the biggest, impact on the cost performance of the Mt Cattlin operations, with fewer (or no) penalties improving the marketability of the concentrate. We found it difficult to reconcile disclosed costs from the past operations but it appears that the costs were in between A\$500-1000+/t of spodumene and we are forecasting this to fall to a life of mine average of <A\$460/t of concentrate (after by-product credits).
- **Off-take priced but a moving feast:** Mitsubishi has exclusive rights to sell up to 100% of Mt Cattlin concentrate into China, South Korea, Taiwan and Vietnam for a four year term. The confirmed price for the first 60kt of 5.5% Li₂O concentrate is US\$600/t in a term sheet (at that time the budgeted output for 2016 was 65kt). In July, GMM announced that the agreement for one customer was changed to supply 15,000t in 2016 with a pre-payment of US\$4.5m, bringing definitive contract commitments to 45kt and prepayments of US\$13.5m (15kt of the original 60kt to be sold into spot market). A further 120,000t of concentrate was also contracted for sale to the same Chinese customers in 2017 (with the price to be negotiated in 4Q16 to reflect the market conditions and potentially now also reflecting the reliability of delivery). The late restart of the plant has meant that any outstanding 2016 tonnage will be fulfilled by 2017 production.

Initial price locked in, which provides certainty as does the tonnage offtake but obviously still dependent on having production.

- **Entering an evolving market** – the lithium market is evolving, which offers both opportunities and threats. The pre-payment for offtake is indicative of the demand for the product by converters. Delivering product on time and on-spec will still be required to cement a position in that market and to ensure that customers commit to long term contracts. Demand for lithium is expected to grow and there are some truly amazing expectations for demand growth and pricing driven by growth in the battery sector. If Mt Cattlin is a suitable example, production could also fail to meet market expectations which could from time to time lead to spikes in spot prices as consumers try to capture additional tonnes. GXY may be a price taker but we see no problem in that, particularly if it can negotiate sales contracts similar to those already achieved – spodumene sales prices will at least reflect the conversion price of lithium hydroxide or lithium carbonate and an operating profit margin. As the first new Australian entrant we believe Mt Cattlin will find its own niche in the market as it offers the market an additional source of ore from a country with a long history of supply.
- **Greenbushes production going to the owners** - shareholders of Talison, namely Tianqi and Albemarle, have already stated that no spodumene material will be made available to any third parties, with all production from Greenbushes to be consumed by conversion facilities from the JV partners’ subsidiary operations. As such, many converters in China have very limited options from where they can source independent spodumene material, given that the whole output of the next project to come online, namely Mt Marion, has also been 100% secured by Ganfeng for the next three years. Other than that, no other meaningful independent sources of spodumene will be available for these converters over the next few years.
- **By-product credits a benefit** – only 85,110lb of Tantalum was sold in the last round of processing due to issues with poor recovery. Based on our estimates of recovery and prices, the average LOM tantalum, credit is expected to be in the order of A\$100-140/t of spodumene concentrate if budget recoveries are reached. Tantalum is NPV accretive and provides a meaningful credit of A\$10-30mpa (if we assume that the cost of tantalum production is solely absorbed by the spodumene circuit). Whilst this is beneficial it is integral to the project success and could be sold at a discount to our price forecast without having a dramatic impact on the project value.

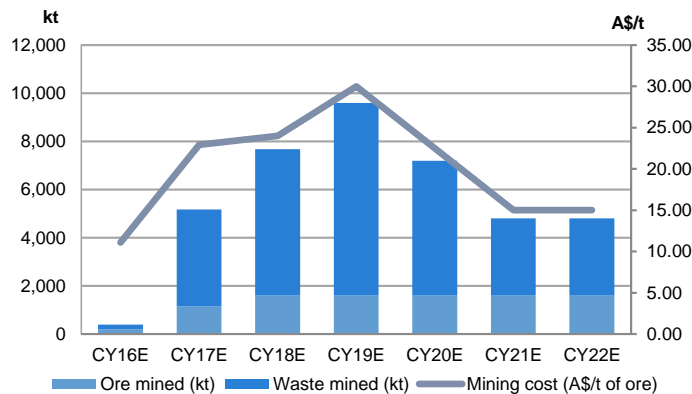
FIG.4: PROCESSING CIRCUIT



Source: GXY

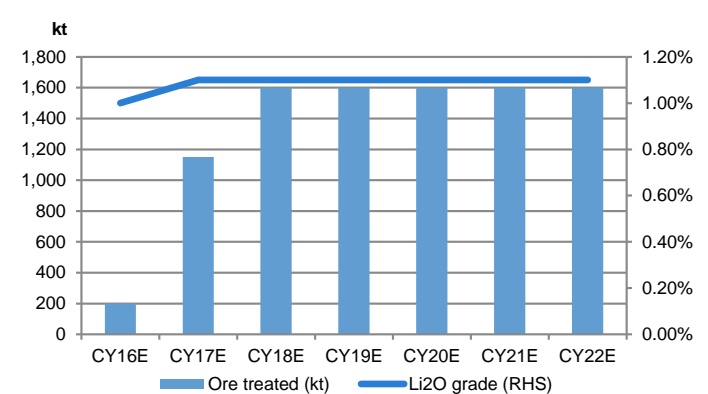
- **Mining** – GXY is using contractors to mine ore and waste. Feed for the plant will initially be broken ore – essentially just a rehandling exercise and much of the pre-strip for the first two years has been done. Our estimated mining costs are \$15/bcm which equates to ~A\$25/t of ore in the first year. Based on previous studies, the life of mine SR is in the order of 4.1 and ranges from 0.5 to 8.3, however based on revised operating economics (price, yield, costs) and the doubling in the plant size, we would expect that the mine plan will undergo substantial revision and provide GXY with an opportunity to renegotiate or re-tender the mining contract to a more favourable unit rate and have a beneficial impact on operating expenses.

FIG.5: ORE AND WASTE – MINING COST



Source:

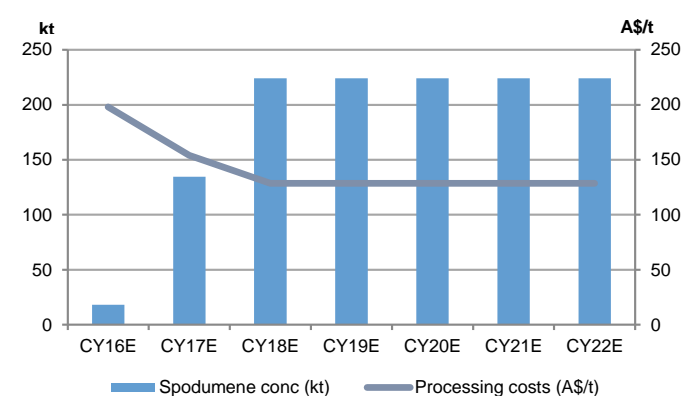
FIG.6: ORE TREATED AND Li2O GRADE



Source:

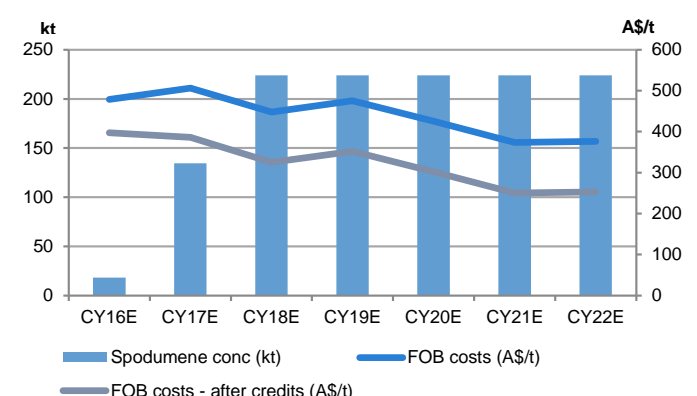
- Processing** – the plant is no longer being scaled up over time. All components are now sized for treatment at 1.6mpta. The plant has been modified to improve lithium and tantalum yields while increasing mica removal. One major change was around the addition of reflux classifiers. Changes to the DMS circuit included engineering out prior operational issues. The four stage crushing circuit has been reduced to three stage and rather than operating for 12 hours per day is now able to operate continuously following the installation of acoustic cladding and baffling around the crusher to reduce the noise levels emanating from the site. The initial spodumene yield has been targeted at 50% and increasing over time to 70% rather than 75%. The additional 5% recovery would have required a flotation circuit which comes at a capital and operating cost that is not justifiable given the current cash position of the operations.
- Transport** – now that the concentrate has less mica in it GXY can ship the concentrate from the port of Esperance.

FIG.7: PROCESSING COST & CONCENTRATE PRODUCTION



Source: Baillieu Holst

FIG.8: FOB COSTS (A\$/t OF CONCENTRATE)



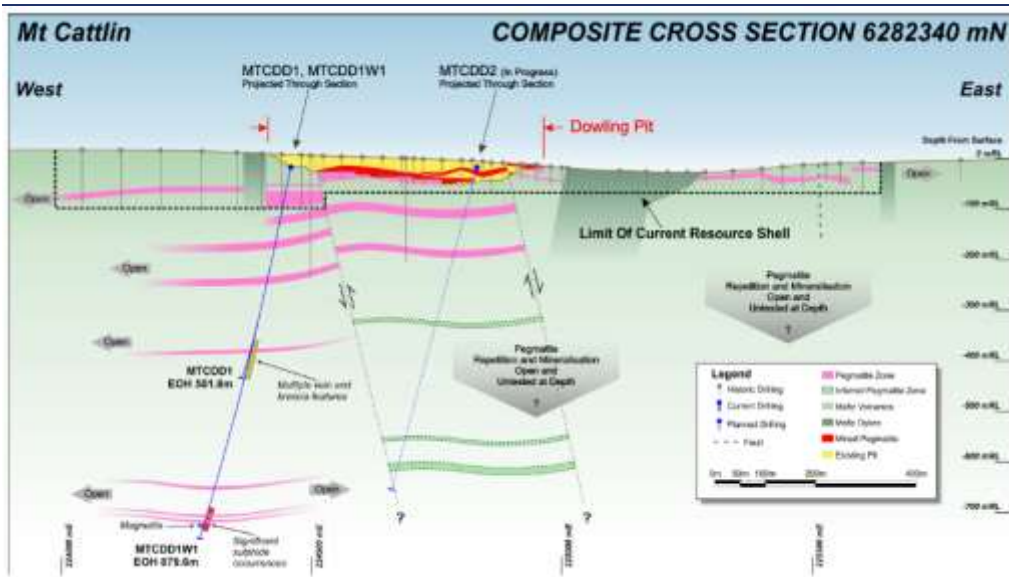
Source: Baillieu Holst

- Costs to be confirmed in 2017:** Our estimated life of mine site costs are A\$47/t of ore or A\$371/t of concentrate. On top of this we have made allowances for third party marketing costs and royalties which brings the FOB pre tantalum credits to A\$60/t of ore or A\$474/t of concentrate. After credits this falls to a life of mine average cost of A\$340/t or US\$255/t of 5.5% spodumene concentrate.

Our life of mine cost estimates are marginally less than GXY's independent review of \$47.82/t of ore.

- Higher prices, better recoveries and more drilling to lift resource base.** The current reserve of 9.9Mt @1.04% Li₂O and 149ppm Ta₂O₃, and resource of 16.4Mt @1.08% Li₂O and 157ppm Ta₂O₃ are based on the Galaxy's reserves and resources calculated in September 2010 and July 2012 and then depleted for mining. The reserve was calculated using assumptions which currently differ in terms of commodity prices, the exchange rate and presumably the costs. While it is too early to impute a value for mineralisation at depth, the potential for resource and underground development is not out of the question. A deep drilling program and resource extension is planned for next year when the plant has been bedded down.

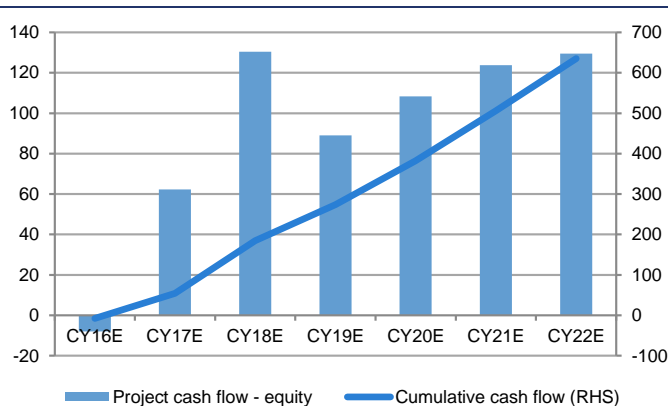
FIG.9: CROSS SECTION



Source: GMM

- Cash flow and valuation should be optimised –** the benefit of the sunk capital and the relatively low refurbishment cost is illustrated in the cash flow chart below. It is worth noting that the dip in the cash flow from 2018 to 2019 is driven by a decline in our assumed spodumene price as the US\$600-700/t contracts fall off and sales are at our sort forecast of US\$500-550/t. While we feel there is a risk that our life of mine operating costs are possibly on the low side, the valuation sensitivity analysis indicates that the project is much more sensitive to currency rather than our cost estimates and there is still some room to move around our base valuation of A\$0.42ps for GXY's equity in Mt Cattlin.

FIG.10: CASH FLOW FROM MT CATTLIN



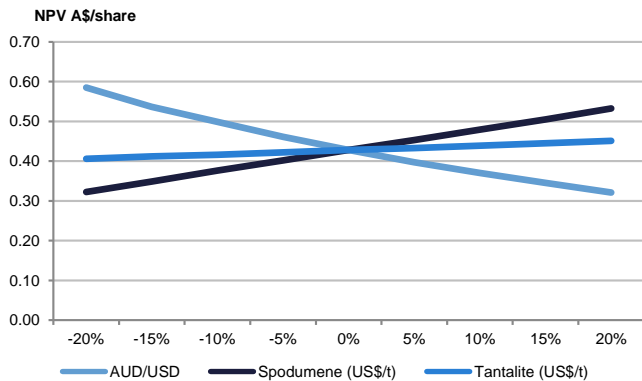
Source: Baillieu Holst

The resource and reserve statement is likely to be revised in 2017 to include the latest operating cost expectations and spodumene prices.

Commodity prices and additional drilling should lead to an increase in reserves.

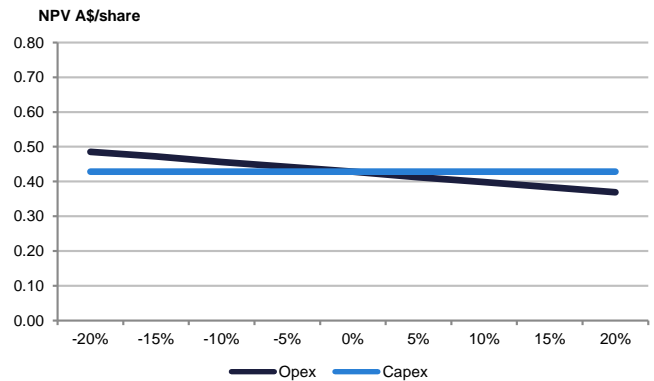
Resources are not expected to be a constraint in the medium term to an expansion

FIG.11: MT CATTLIN NPV SENSITIVITY



Source: Baillieu Holst

FIG.12: MT CATTLIN NPV SENSITIVITY

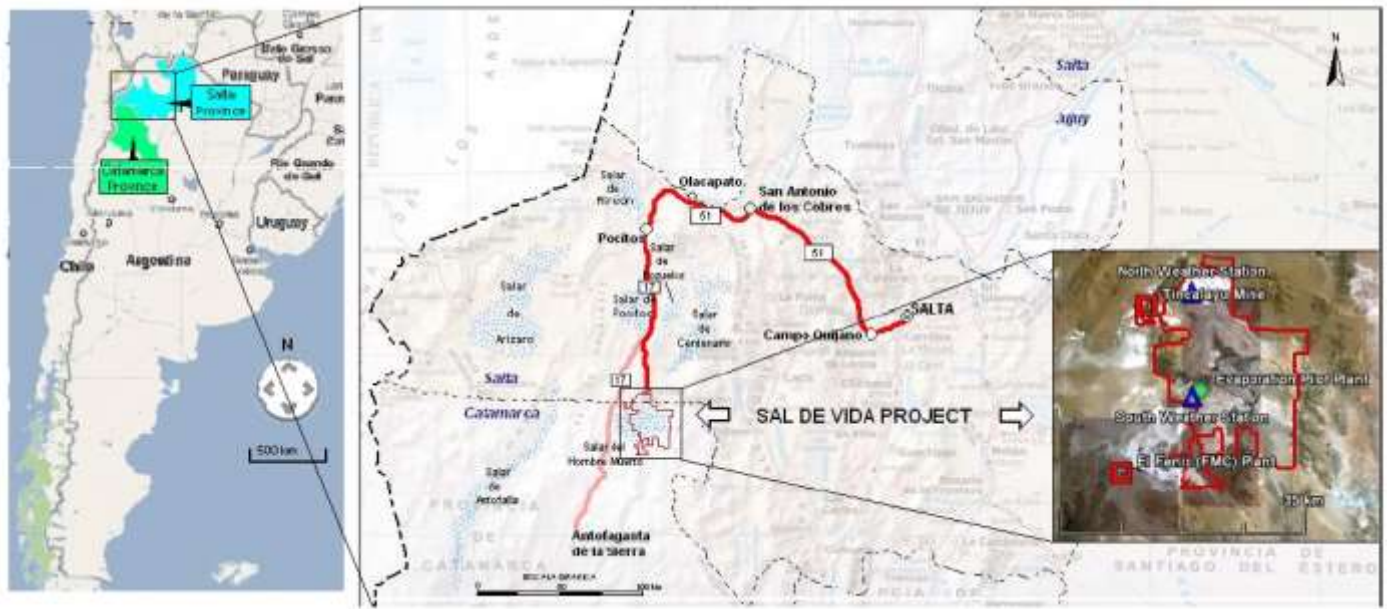


Source: Baillieu Holst

Sal de Vida

- Location** - The Sal de Vida project is located in Argentina, on the northern boundary of the Catamarca Province in the Salar del Hombre Muerto, 1,300km north west of Buenos Aires (and 390km SE of Antofagasta, Chile). The ground was originally under exploration permits and mining licenses controlled by Lithium One (taken over by GXY in 2012). It is ~20km from and on the same salar as FMC's El Fenix lithium brine operations, which have been in production since 1997 and have a capacity of 10,000tpa of LCE and 7,600tpa LiCl (brines undergo solar concentration on the salar and the concentrate is transported 350km by road to the General Guemes plant for processing).

FIG.13: LOCATION MAP

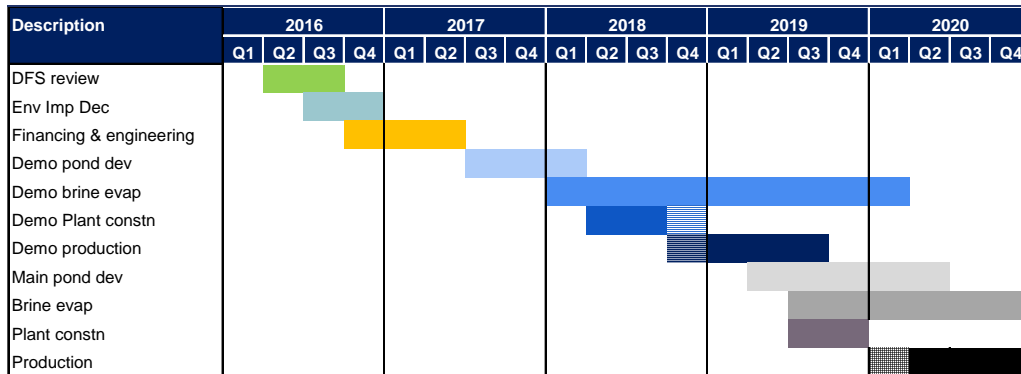


Source: Baillieu Holst

- Work to date** – Exploration by Lithium One and GXY has included trenching, gravity surveys, augur drill and bore holes, brine sampling/testing and a solar pond pilot plant. In 2010, Lithium One released inferred resources for lithium and potassium. This was followed up by a preliminary assessment and economic evaluation in 2011, a DFS in 2013 by GXY and a recently released update to the DFS in August 2016. We have used a combination of the three to build our model.
- Development time line** – GXY has not yet published a timetable for development of Sal de Vida, but given the results of the Revised DFS released in August we believe the development is likely to go ahead. We envisage that the next six to nine months will be spent on selecting the financing structure, negotiating fiscal terms with the Argentinian

government, designing a Demonstration Plant to confirm processing assumptions, training staff and produce product for marketing and specification testing. The successful completion of a demonstration plant and ponds and a period of stable production could lead to commercial production in 2020.

FIG.14: INDICATIVE TIMELINE



Source: Baillieu Holst

Key changes over the study periods

- Development in 2 stages:** The first being a demonstration plant with a 1200tpa LCE production capacity. This small scale plant would operate on a continuous basis and provide GXY with a means to validate the process route, provide an opportunity to train staff, deliver product for customer acceptance testing and marketing. GXY has indicated that work on its design is in the preliminary stages. In our modelling we have allowed for US\$30m in capital to construct the ponds and plant. Because of the small scale of the plant the only useful component of the demonstration operations will be the evaporation ponds. Full production will require a significantly larger plant, power supply and pond area.
- The project scope is much the same as the last DFS:** Over the last six months GXY has had its own team, made up of a number of consultants, review and update the 2013 Definitive Feasibility Study. The update included revision of the fiscal terms and exchange rate forecasts, and a reassessment of the capital expenditure and operating costs. The overall plant capex has not changed significantly since 2013 and GXY has indicated that the production of KCI (muriate of potash – MOP) could be delayed rather than included up front with the saving of US\$34m in capital for the MOP plant. The operating cost estimates now appear to be very realistic. The LCE equivalent cost of ~US\$3000/t is close to industry estimates of the operating costs of FMC’s El Fenix operations which share the same salar. In comparison, the PEA estimates would have made it the lowest cost operation globally.

Operating costs per tonne of LiCO3 have risen 17% since the 2013 Study and ~120% since 2011 estimates. The opex estimates now appear to be more realistic.

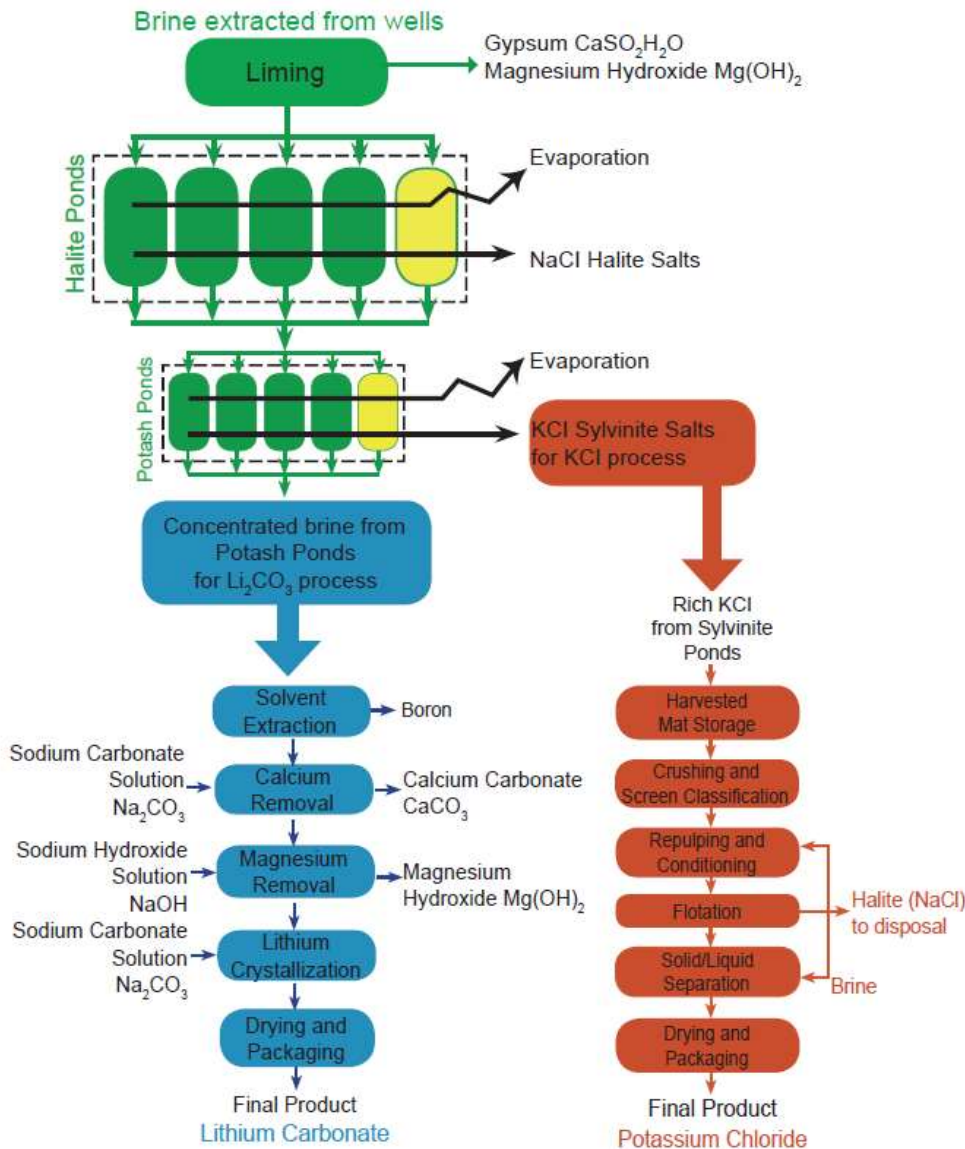
FIG.15: SAL de VIDA STUDY SUMMARY

	PEA	DFS 2013	DFS 2016	Baillieu
Resources				
M&Ind (Mt)				
Li ₂ CO ₃			11.882	
KCl			22.659	
Inferred (Mt)				
Li ₂ CO ₃	5.445		3.237	
KCl	21.310		6.174	
M,I&Ind (Mt)				
Li ₂ CO ₃			15.119	
KCl			28.833	
Reserves				
P&P				
Li ₂ CO ₃		1.139	1.139	
KCl		4.197	4.197	
Production (ktpa)				
Li ₂ CO ₃	25	25	25	25
KCl	107	95	95	95
Capex US\$m				
include contingency	± 20%	± 10%	+ 9%	
Demo plant				30
Sustraining capex				69
Costs				
US\$/t of LiCO ₃	1,537	2,889	3,369	3,314
US\$/t of KCL	184			
US\$/t of Li ₂ CO ₃ after credits		2,200	2,959	2,962
Value of credit		689	410	352
Price assumptions				
Li ₂ CO ₃ (US\$/t)	6,600	6,395	11,000-13,000	8,639
KCL (US\$/t)	610		220	270
NPV after tax				
10% WACC	556	380	1,043	420
IRR	24.6%	19.0%	34.6%	21.3%

Source: GXY, Baillieu Holst

- The process.** Brine production envisaged in PEA is likely to be similar to the final design unless there is a technological change. To produce 25,000tpa of Li₂CO₃ the operations will require 29,767m³ of brine per day (344l/sec). On the basis of previous hydrogeological studies it was thought that an average production rate per well of 21l/sec was achievable and the project would therefore require a borefield of 24 production wells. The process route is likely to be similar to FMC's nearby Fenix operation where brine is treated with lime to remove Mg and is then concentrated to near potassium concentration in halite ponds. The high potassium brine is then transferred into potash ponds where it is further evaporated and muriate of potash (KCl) crystallises together with halite, borate salts and gypsum. In the potash ponds the brine is evaporated to ~2% lithium. The high lithium brine is then transferred to the boron removal step followed by Ca/Mg removal and then into the Li₂CO₃ crystallisation process. After crystallisation the lithium carbonate is washed in a multistage washing process, then dried and stored. GXY has also indicated they may build a potash circuit at a cost of US\$34m and potentially delay its construction by 1-2 years. To produce KCl the salts from the potash ponds are removed from the ponds and transferred to the potash plant for recovery of the potassium as KCl.

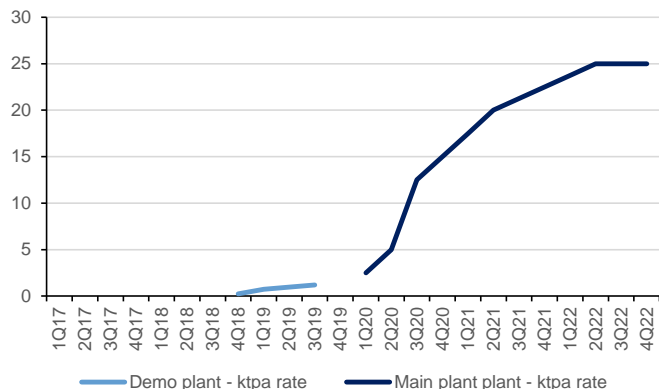
FIG.16: POSSIBLE PROCESS ROUTE



Source: *Lithium 1*

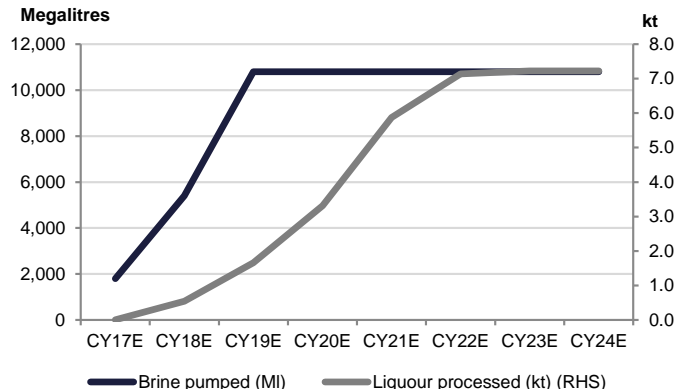
- Production and costs** – we have forecast that production from the demonstration plant starts in late 2018 with the plant ramping up to a nominal 1200tpa rate. As these operations will be used to prove the process and deliver product for consumer testing, we have assumed that revenue and operating costs will be capitalised and contained within our estimated US\$30m in capital expenditure for the demonstration plant. In the recent DFS update, GXY indicated that it will take three years for the 25ktpa of LCE production rate to be achieved and this is what we have assumed (FIG.17). The most recent cost estimates published by GXY were US\$3,369/t before potash by-product credits and we have reset our forecasts to be inline. GXY also estimates costs of US\$2,959/t of LCE after by-product credits. In our modelling, we have used GXY’s effective cost to produce potash and our MOP price forecasts.

FIG.17: ASSUMED LCE ANNUALISED PRODUCTION RATE



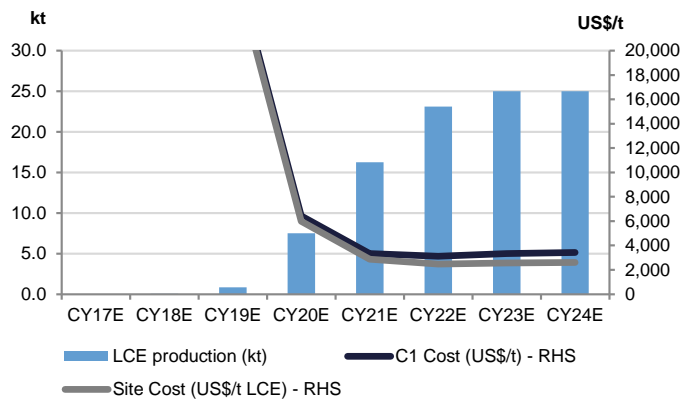
Source: Baillieu Holst

FIG.18: POND & LIQUOR RAMP-UP



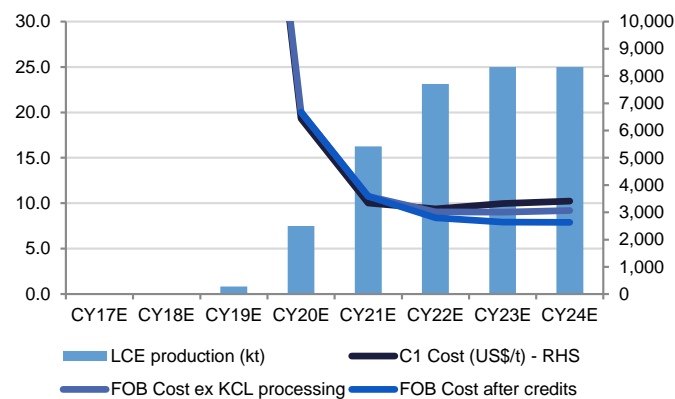
Source: Baillieu Holst

FIG.19: LITHIUM CARBONATE PRODUCTION AND COSTS



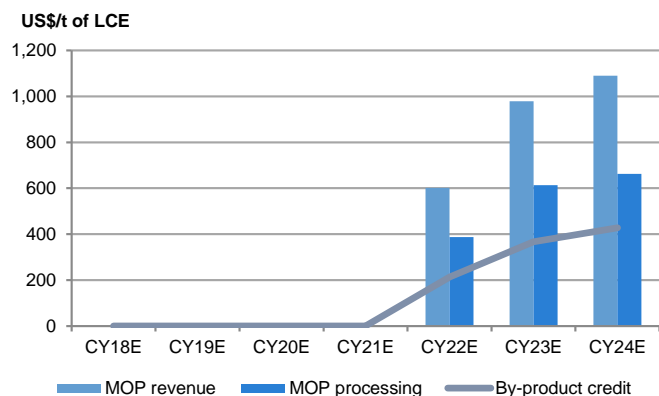
Source: Baillieu Holst

FIG.20: LITHIUM CARBONATE PRODUCTION AND COSTS



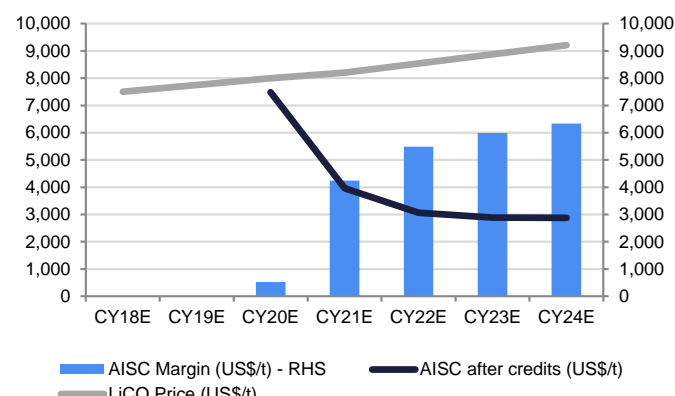
Source: Baillieu Holst

FIG.21: MOP (KCI) BY PRODUCT CREDITS



Source: Baillieu Holst

FIG.22: COSTS AND MARGIN (US\$/t)

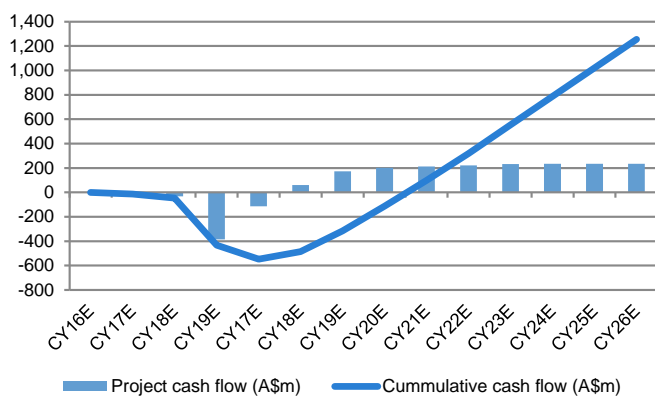


Source: Baillieu Holst

What are the risks?

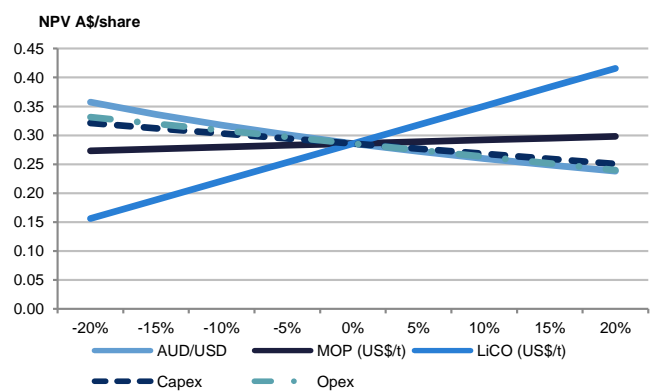
- Operating costs and fiscal regime – the relative weakness in the PESO should have a positive impact on the costs in US\$ terms, however domestic inflation has been a significant issue in the past, so stability of the Argentine economy is important. It appears that the new government and President have been able to slowly get inflation under control and have changed a number of tariffs and taxes. This has promoted investment in the country, but it is also important that there is some fiscal stability and that a new regime does not come and change the rules for the worse.
- Financing – depending on the project’s economics and the market climate it is possible that GXY could fund SdV from cash flow derived from Mt Cattlin and debt, which is what we have assumed in our modelling. Other options include a sell-down in project equity to a customer.
- Access to gas and its cost – access is unlikely to be a risk since the Fenix gas pipeline has been completed and GXY has started preliminary planning for a 20km spur from the FMC’s Fenix plant to the Sal de Vida plant location. Discussions are also underway with the Federal Government and the Salta Province on the potential to expand the electricity grid to Hombre Muerto.
- **Capex and Cash flow forecasts** – we have used the base capex of US\$376m in our modelling and assumed it is 100% debt financed for simplicity sake. We have also included an additional US\$6mpa in sustaining capital which may need to be increased. The chart below shows the sensitivity of the NPV of the project for various changes in underlying assumptions. Note our base capex is US\$406m for the demo and commercial plants. Our base NPV is A\$0.28ps and this increases to A\$0.32ps if the capex falls 20% to US\$325m, or to A\$0.25 if the capex increases to US\$487m. Not surprisingly the NPV is most sensitive to the underlying lithium assumptions.

FIG.23: SdV PROJECT CASHFLOW



Source: Baillieu Holst

FIG.24: SdV NPV SENSITIVITY



Source: Baillieu Holst

James Bay

- GXY acquired its ownership of the project initially through the acquisition of 20% for C\$3m from Lithium One (in 2011), which was followed by an option to earn 70% by funding a DFS. 100% ownership of the project came through GXY’s merger with Lithium One. Work carried out by Lithium One and GXY was used to calculate a resource, while environmental studies were carried out and a bulk sample was taken for pilot scale testing. The aim at that stage was to fast track James Bay, build a plant similar to the one at Mt Cattlin and sell the spodumene concentrate to converters in China and Japan. GXY’s merger with Lithium One in mid-2012 saw priorities change and work to progress the DFS at James Bay was halted to allow GXY to concentrate on development of Sal de Vida.
- In 2015, GXY did a similar deal with GMM on James Bay as it did with Mt Cattlin. GMM was spending \$5m over a three-year period to earn a 50% equity interest from GXY in a pegmatite body in Quebec, Canada. The bulk of the cash was to be used to fund recommencement of the project DFS. We expect the same work to be carried out but this time GXY will now sole fund the work. That’s said, we assume very little work will be carried out until Mt Cattlin is operating at capacity.

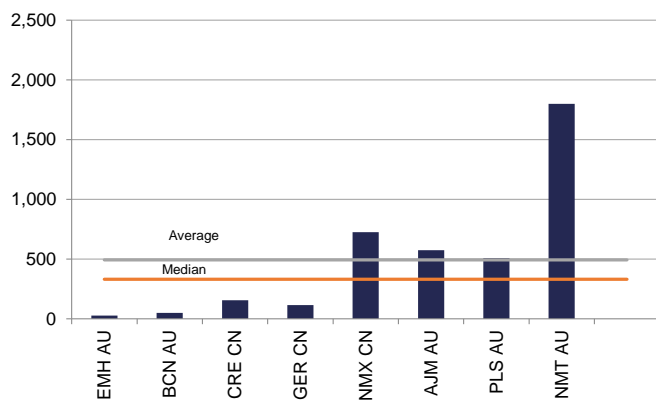
FIG.25: INDICATIVE TIMELINE FOR JAMES BAY DEVELOPMENT

Description	2016				2017				2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
BFS completion																				
Env Imp Dec																				
DFS																				
Financing																				
Plant constn																				
Pre-strip																				
Start-up																				

Source: Baillieu Holst

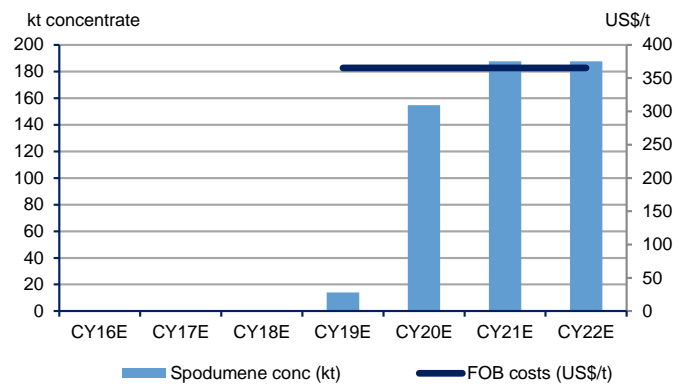
- The James Bay deposit occurs at surface and resource modelling indicates that the resource is amenable to open pit extraction. The pegmatite contains indicated resources of 11.75 million tonnes grading at 1.30% Li₂O and inferred resources of 10.47mt grading at 1.20% Li₂O.

FIG.26: PEGMATITE RESOURCE VALUES (US\$/t Li₂O)



Source: Company reports, Bloomberg

FIG.27: POSSIBLE PRODUCTION AND COSTS

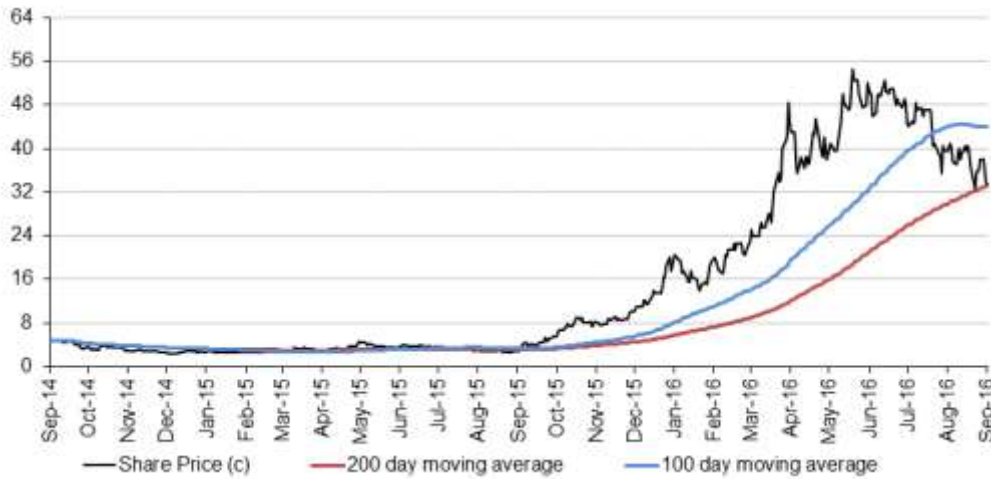


Source: Baillieu Holst

- **Resource value using listed comparables:** To derive a value for James Bay we have used the implied resource value of US\$333/t of Li₂O (the median for the listed spodumene players excluding GXY) which generates a value of \$A117m for GMM's equity in the project.
- **Resource value using a quick NPV:** Using Nemaska's 2016 NI 43-101 review for the Whabouchi mine and concentrator (excluding the underground and downstream processing options) as a proxy for James Bay's capex and opex, we generate an NPV of A\$101m after capex of US\$250m, site costs of US\$274/t of concentrate and a production rate of 200ktpa of spodumene output.
- **Risked value:** Given that there is still a lot of work to do on James Bay we have decided to take an average of the two valuations above and applying a 50% risk weight, the outcome of A\$55m has been included in our GXY valuations.

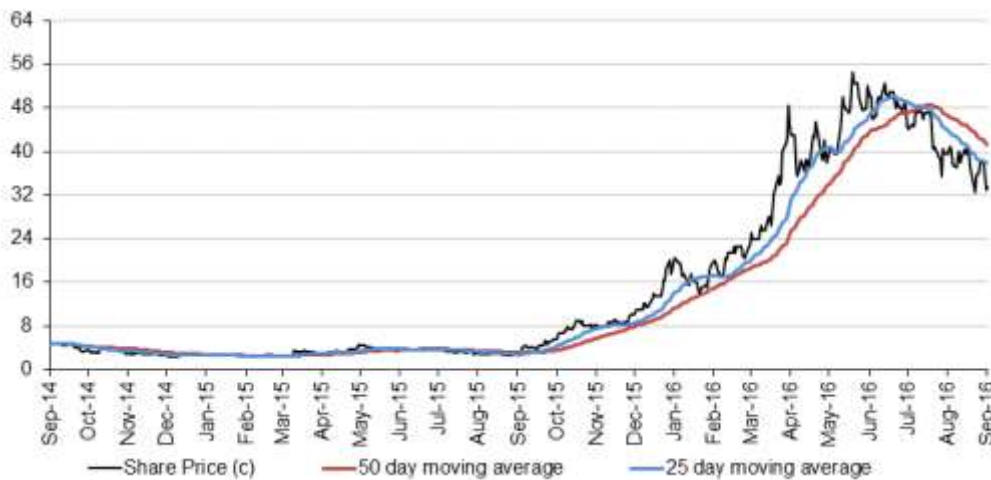
Appendix

FIG.28: LONG TERM MOMENTUM INDICATORS



Source: Iress

FIG.29: SHORT TERM MOMENTUM INDICATORS



Source: Iress

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