FOSTER STOCKBROKING

EQUITY RESEARCH

Materials

4th November 2021

Prospect Resources Ltd (PSC.ASX)

Major global litihum asset nears development

Event:

- **We initiate research coverage on Prospect Resources (PSC).**

Investment Highlights:

- **Arcadia in global top five undeveloped hard rock lithium resource.** PSC's major asset is its 87% interest in the Arcadia hard rock lithium deposit in Zimbabwe. It contains 72.7Mt JORC Resource at 1.06% Li_2O for 770kt Li_2O (1.66Mt LCE), which we estimate places it in the top five global undeveloped hard rock deposits. Reserves are 42.3Mt at 1.19% Li_2O and support at least an 18 year mine life.
- **Staged OFS has attractive metrics, but Direct OFS to be better.** Staged OFS contemplated 1.2Mtpa in first four years then rising to 2.4Mtpa for years 5 to 20, delivering post-tax NPV_{10} of US$408M and IRR 34%. However a Direct-to-2.4Mtpa OFS due end CY21 should be better, from cash flows brought forward, lower unit costs, and more efficient capex. We believe the direct-to-2.4Mpta approach will be preferred by company, investors, and offtakers. We estimate Arcadia AISC cif of US$437/t, placing it in bottom half of the 2025 cost curve.
- **Product for both high-growth EV and premium pricing glass-ceramics markets.** Arcadia's production is approximately 55:45 spodumene:petalite, making it one of only a few mines that can serve the whole lithium market. 80% of Arcadia's petalite is technical grade which receives an average 30% premium to spodumene pricing. Its Fe_2O_3 is <0.05%, which we estimate to be lower than that of concentrates from proposed and existing mines (including Greenbushes).
- **83% of Stage 2 production covered by binding offtakes.** These include Sibelco on technical grade petalite for glass-ceramics, and Sinomine on chemical spodumene and petalite, including for conversion into lithium carbonate and hydroxide. We expect strong interest exists for remaining balance.
- **Arcadia has mining grant, environment approval, and investment license**. Additionally, the project has lower tax rate and royalties due to status and incentives granted by Government. Arcadia is near Harare and close to infrastructure and workforce.
- **Funding interest formalised under partnering process**. Arcadia has attracted interest from a number of a parties, for which PSC has formalised a process and is currently screening proposals. Given acceleration in funding for new projects and competitive tension favouring asset owners, we expect a positive outcome.

Earnings and Valuation:

- **We forecast first production and earnings beginning mid-FY24e, with first full year of production in FY25e**. We estimate Arcadia LT EBITDA of A$116M (real).
- **We value PSC at $0.82/share on a risked basis (0.55x NPV_{10}).** Our Arcadia assumptions are close to that of the Staged OFS, except that we model a direct-to-2.4Mtpa approach. Our valuation assumes equity:debt funding of 50:50 totalling A$330M, with equity issued near the current share price. Our unrisked NPV_{10} is $1.49/share, assuming no equity dilution.

Recommendation:

- **We initiate on PSC with a Buy and 12-month PT of $0.82/share, based on our risked valuation.** We expect major catalysts to be: 1) Direct-2.4Mtpa OFS; 2) Outcome of partnering process; 3) Funding; 4) FID; and 5) Corporate activity.

Disclosures

The analyst owns 71,000 PSC shares.
Foster Stockbroking and associated entities (excluding Cranport Pty Ltd), own 696,000 PSC shares.
Cranport Pty Ltd owns 2,500,000 PSC shares.
Refer details end of report.
Foster Stocking acted as Joint Lead Manager to the $18M placement of 45M PSC shares at $0.40 in October 2021, for which it will receive fees.

Recommendation	Buy
Previous	na
Risk	High
Price Target	**$0.82**
Previous	n/a
Share price (A$)	**$0.50**
ASX code	PSC
52 week low-high	$0.098-$0.505
Valuation - risked (A$/share)	**$ 0.82**
Methodology	risked NPV
Capital structure	
Shares on Issue (M)	429
Market cap (A$M)	215
Net cash (debt) (A$M)	26
Options (M)	40
Diluted EV (A$M)	209
Ave daily volume ('000)	1,622

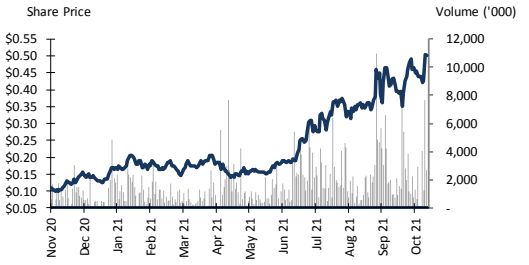
Earnings	FY21a	FY22e	FY23e	FY24e
Sales	0	0	0	60
EBITDA adj	-3	-5	-5	29
NPAT pre minorities	-3	-4	-10	11
NPAT attrib.	**-3**	**-4**	**-10**	**10**
EPS adj. $*	**-0.01**	**-0.01**	**-0.01**	**0.01**
PE x	**nm**	**nm**	**nm**	**36.8**
EV/EBITDA x	nm	nm	nm	15.7

** Adj =underlying*

Susbtantial shareholders	%
Eagle Eye Asset Holdings Pte Ltd	9.5%
Sinomine International Exploration (Hong Kong) Co Ltd	5.4%

Board	
Mark Wheatley	Non-Executive Chairman
Sam Hosack	Managing Director
Duncan (Harry) Greaves	Executive Director
Gerry Fahey	Non-Executive Director
Zivanayi (Zed) Rusike	Non-Executive Director
Dev Shetty	Non-Executive Director
HeNian Chen	Non-Executive Director

Share price graph



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Prospect Resources (PSC)

Full Year Ended 30 June

Profit and Loss A$M	2021a	2022e	2023e	2024e
Revenue	0	0	0	60
Operating costs adj.	3	5	5	31
EBITDA adj.	**-3**	**-5**	**-5**	**29**
D&A	0	0	0	8
EBIT adj.	**-3**	**-5**	**-5**	**21**
Net Interest exp / (income)	0	0	5	10
PBT adj.	**-3**	**-4**	**-10**	**11**
Tax exp / (benefit) adj.	0	0	0	0
NPAT pre minorities adj.	**-3**	**-4**	**-10**	**11**
Minorities adj.	0	0	0	1
NPAT adj.	**-3**	**-4**	**-10**	**10**
EPS diluted adj. ($)	**-0.01**	**-0.01**	**-0.01**	**0.01**

Cashflow A$M	2021a	2022e	2023e	2024e
EBITDA adj.	-3	-5	-5	29
Change in WC	0	0	0	-4
Net interest	0	0	-5	-10
Tax	0	0	0	0
Share based expense	0	0	0	0
Other	0	0	0	0
Operating Cashflow	**-3**	**-4**	**-9**	**17**
Purchase of PP&E	0	0	0	0
Acquisitions	0	-1	-1	-1
Capitalised expenses	-3	-4	-196	-101
Investments	0	0	0	0
Other	0	1	0	0
Investing Cashflow	**-3**	**-4**	**-197**	**-102**
Equity issue	13	183	0	0
Debt proceeds	0	165	0	0
Debt repayments	0	0	0	0
Dividend paid	0	0	0	-1
Other	-1	0	0	0
Financing cash flow	**12**	**348**	**0**	**-1**
Net cash flows	**6**	**340**	**-206**	**-87**

Balance Sheet A$M	2021a	2022e	2023e	2024e
Cash	8	348	142	55
Receivables	1	1	1	5
Inventories	0	0	0	1
PPE	1	0	0	327
Capitalised expl'n	26	30	226	0
Intangibles	0	0	0	0
Other	0	1	2	0
Total Assets	**35**	**380**	**371**	**388**
Accounts payable	1	1	2	3
Provisions	0	0	0	0
Debt	0	165	165	165
Other	0	0	0	5
Total Liabilities	**0**	**166**	**167**	**173**
Capital & reserves	88	88	271	271
Retained earnings	-53	-57	-67	-56
Equity attrib.	**35**	**214**	**204**	**215**
Minorities	1	1	1	1
Equity total	**34**	**215**	**205**	**217**

Financial Metrics	2021a	2022e	2023e	2024e
EBITDA margin	nm	nm	nm	49%
EBIT margin	nm	nm	nm	35%
Gearing (ND/ND+E)	nm	nm	10%	34%
Interest Cover (EBIT/net int)	nm	nm	nm	2.2x
Average ROE %	nm	nm	nm	5%
Average ROA %	nm	nm	nm	6%
Wtd ave shares (M)	326	414	812	812
Wtd ave share diluted (M)	326	443	842	842

Valuation multiples	2021a	2022e	2023e	2024e
P/E x	**nm**	**nm**	**nm**	**36.5**
EV/EBITDA x	**nm**	**nm**	**nm**	**15.7**

Company Valuation

Segment	Unrisked A$M	A$/share	Risked A$M	A$/share
Arcadia Reserves (87%) NPV_{10}	577	$1.00	462	$0.58
Other Arcadia expl'n/resources	115	$0.20	34	$0.04
Chisanya	15	$0.03	5	$0.01
Corporate & working capital	-46	-$0.08	-46	-$0.06
Future equity	165	$0.28	165	$0.21
Options-in-money at val	11	$0.02	11	$0.01
Net cash	26	$0.04	26	$0.03
Total	**863**	**$1.49**	**657**	**$0.82**
Shares now M	429		429	
Future equity M	111	issued at val	330	issued at near s'price
Options-in-money at val M	40		40	
Fully diluted shares M	**579**		**798**	

Commodity Assumptions		2021a	2022e	2023e	2024e
Prices:					
Petalite 4% TG cif	US$/t	750	1,091	1,197	1,125
Spodumene 6% BG cif	US$/t	577	839	921	865
Petalite 4% BG cif	US$/t	389	565	620	583
Tantalite	US$/lb	75	86	87	89
A$	US$	0.72	0.75	0.75	0.74
Production:					
Petalite 4% TG cif	kt	-	-	-	17
Spodumene 6% BG cif	kt	-	-	-	17
Petalite 4% BG cif	kt	-	-	-	4
Tantalite	klb	-	-	-	353
AISC cif	US$/t	-	-	-	298

Resources and Reserves

JORC Resources	Ore Mt Mt	Li_2O %	Li_2O kt	Ta_2O_5 ppm	Ta_2O_6 Mlbs
Measured	15.8	1.12%	77	113	3.9
Indicated	45.6	1.06%	484	124	12.5
inferred	11.3	0.99%	111	119	2.9
Total	**72.7**	**1.06%**	**770**	**121**	**19.4**
JORC Reserves	**42.3**	**1.19%**	**504**	**121**	**11.3%**

Capital structure	M
Ordinary shares	429
Options	40
Fully diluted	**469**

Source: Company; Foster Stockbroking estimates.

INTRODUCTION

- Prospect Resources Ltd (PSC) is a Perth, Western Australia, headquartered company with its major asset being the fully permitted Arcadia lithium project in Zimbabwe. A DFS and two-stage optimised feasibility study (OFS) have been completed, and PSC is currently in the process of finalising a direct-OFS, which should provide a platform for it to finalise funding, bringing the project to shovel-ready status. The stock is listed on the ASX and Frankfurt Stock Exchange.

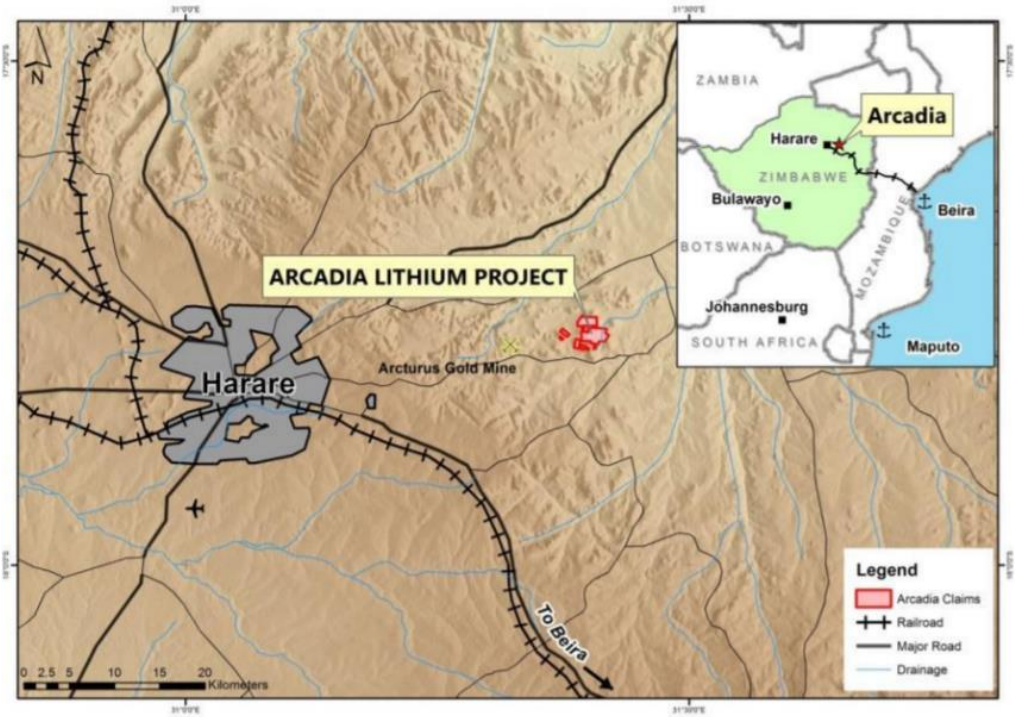
ARCADIA (PSC, 87%)

Hard rock lithium project in Zimbabwe

- PSC acquired the Arcadia lithium project in 2016, in which it currently owns 87% via its subsidiary Prospect Lithium Zimbabwe Pvt Ltd. The balance of Arcadia is held by locals Paul Chimbodza (7%) and Professor Kingston Kajese (6%), who are free carried during development of the project. It is expected that prior to partners receiving any dividend from the project, that these will in lieu be paid to PSC as reimbursement of carrying costs.

- Arcadia encompass 10km^2 and is located 38km north east of Harare, the capital of Zimbabwe, on Nhaka Valley estate, in the Goromonzi District. It lies in wooded undulating hills surrounding largely fallow agricultural land. Historic lithium production from Arcadia occurred intermittently from 1950s to 1970s, with production ceasing in 1978 due to economic sanctions. Exploration occurred up until early 1980s.

Figure 1: Location of Arcadia



Source: Company.

Petalite rich ore

- Arcadia is a large hard rock spodumene-petalite lithium deposit, the lithium hosted in multiple stacked parallel pegmatite layers numbering up to 14, of varying thickness (>1m) in which some

bifurcate. The pegmatites are hosted in meta-basalt which intrude the Archean age Harare Greenstone Belt. Overall average thickness of the deposit is 15m, ranging from 3m to 50m. The four largest pegmatite bodies are Upper, Main, Lower, and Lower Main Pegmatite. Main and Lower Main exhibit the largest thicknesses (3m to 10m, and 25m to 50m), with Main Pegmatite averaging 5.5m and the Lower Pegmatite averaging 23m thickness.

- The deposit is relatively flat, dipping gently at 10° from surface to as deep as from 91m. Mineralisation has been defined by drilling, mapping, and trenching for approximately 4.5km strike and 1km down dip. Most pegmatite is within 130m from surface.

- Unlike most global hard rock lithium deposits which are dominated by spodumene, petalite is the predominant lithium ore at Arcadia, in a ratio of 2:1 to spodumene. The petalite is mostly coarse grained while spodumene is fine. Both spodumene and petalite are silicates containing lithia silica, and alumina, but with differing molecular structures. While petalite contains less lithia (maximum 5%) than spodumene (maximum 8%), it has typically lower iron content. Gangue minerals include quartz, alkali feldspars, and muscovite. Tantalite is also present.

JORC RESOURCES

One of world's largest undeveloped hard rock resource projects

- Arcadia contains JORC Resources of 72.7Mt @ 1.06% Li_2O for 770kt of contained lithia (Li_2O), or 1.66Mt lithium carbonate equivalent (LCE), as well as 19.4Mlbs of tantalite (Ta_2O_5) at 121 ppm. The Resource encompasses the four largest pegmatite bands and lies across 2.6km of strike, is 900m down dip, and to depth of 130m. The Resource has a high-grade component of 41.2Mt at 1.39% for 572kt of contained Li_2O. It is also low in deleterious elements, including iron.

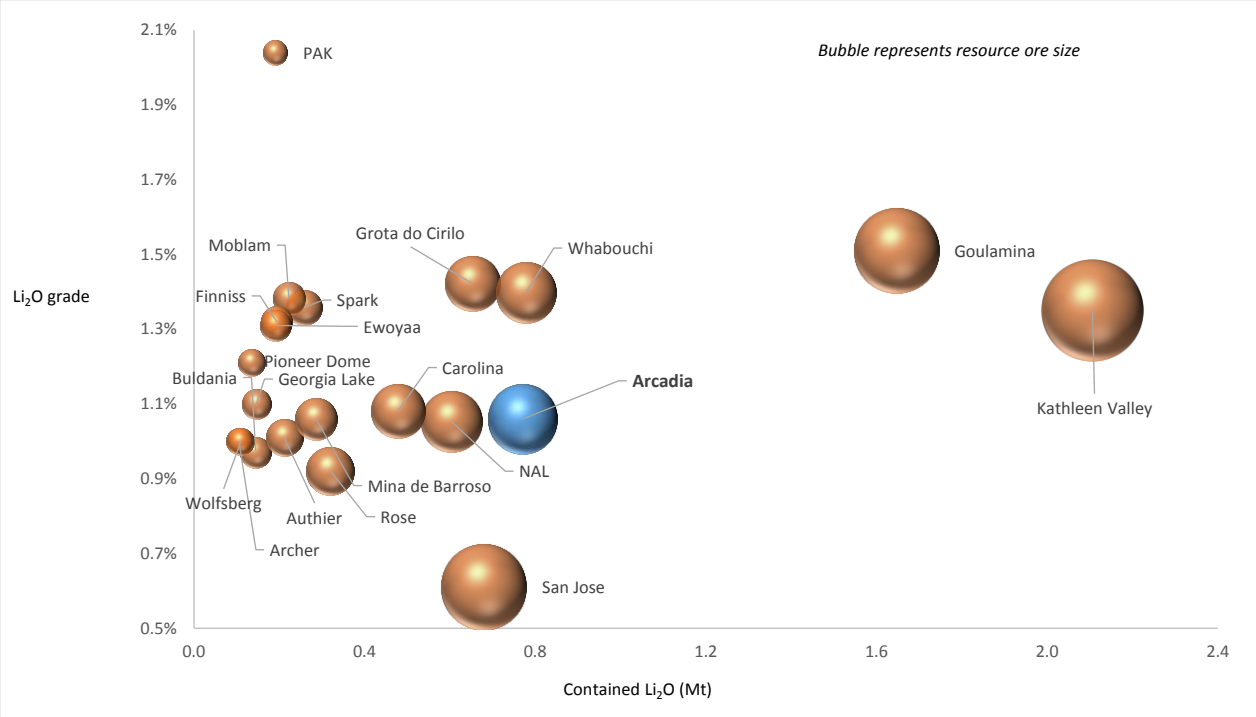
Figure 2: Arcadia Resources

JORC Resources 0.2% Li_2O c/off	Ore Mt	Li_2O %	Ta_2O_5 ppm	Li_2O kt	Ta_2O_5 Mlbs
Measured	15.8	1.12%	113	176.9	3.9
Indicated	45.6	1.06%	124	483.6	12.5
inferred	11.3	0.99%	119	111.3	2.9
Total	**72.7**	**1.06%**	**121**	**770.2**	**19.4**
High Grade component 1% Li_2O c/off					
Measured	9.8	1.43%	123	140.5	2.7
Indicated	26.2	1.37%	128	358.4	7.4
inferred	5.2	1.38%	114	71.8	1.3
Total	**41.2**	**1.39%**	**125**	**572.4**	**11.4**

Source: Company.

- We estimate Arcadia's contained lithia ranks its fifth in terms of size among the world's undeveloped hard rock deposits, behind AVZ Minerals' Manono, Liontown Resources' Kathleen Valley, Firefinch's Goulamina, and Nemaska's Whabouchi.

Figure 3: Global Undeveloped Hard Rock Lithium Deposits by JORC Resources*



*Source: Companies; Foster Stockbroking estimates. Excludes clay/sediment deposits. *Manono excluded as outlier.*

RESERVES

Mine life fully underpinned by JORC Reserves

- Arcadia's JORC Reserves are 42.3Mt at 1.19% Li_2O and 121ppm $Ta2O_5$ for 504kt contained Li_2O. This would support an 18-year mine life at 2.4Mtpa rate. The reserves assume 5% mining loss and 5% dilution, and are all open-pittable, with pit optimisation assuming prices of US$736/t for spodumene, US$75/lb for tantalum, and a weighted average price of US$910/t for chemical and technical grade petalite. Average global lithium recovery of 55% and life of mine strip 3.2x were also assumed.

Figure 4: Arcadia JORC Reserves

JORC Reserves	Ore Mt	Li_2O %	Ta_2O_5 Ppm	Li_2O kt	Ta_2O_5 Mlbs
Proved	11.8	1.25%	114	148	3.0
Probable	30.5	1.17%	124	357	8.3
Total	**42.3**	**1.19%**	**121**	**504**	**11.3**

Source: Company.

STAGED AND FULL-SCALE STUDIES HIGHLIGHT OPTIONS

Attractive metrics from both DFS and Staged Optimised Feasibility Study (OFS)

- PSC's most recent studies on Arcadia are: 1) Updated DFS from December 2019, which examined a 2.4Mtpa operation over 15.5 years, and 2) Staged OFS released October 2021, which contemplated an initial 1.2Mtpa mine, expanding in Year 5 to 2.4Mtpa.
- The rationale for the Staged OFS was prompted by the downturn in lithium markets in mid-2019 and early-2020, and aimed to minimise Arcadia's funding and market risk, as well as

project execution period and technical/operating risks. The objective was to start at half the ultimate scale and then duly expand when market and funding appetite returned or project success was well established.

Lower spodumene recovery in OFS vs DFS, but largely offset by prices

- We summarise key highlights from both the Staged OFS and DFS in Figure 6. Arcadia at full-rate of 2.4Mtpa will produce 146ktpa spodumene and 119ktpa petalite over 18 years if full stage from the outset. A key difference in the Staged OFS vs the DFS was lower global lithium recovery, mostly of spodumene, refined after more met tests. This meant higher unit costs than the DFS, but impact on earnings was largely offset by higher lithium prices. As a result Stage 2 OFS EBITDA of US$107M is only down 6% on that of the DFS' US$114M.

Staged approach inferior to Direct in terms of NPV and IRR

- Ultimately, the OFS compromised valuation and return vs the DFS. NPV_{10} is US$408M and IRR 34% for the Staged OFS, vs US$645M and 70% from the DFS. This is due to 1) Deferring significant full-scale cash flows by five years; and 2) Increasing overall capex due to inherent inefficiency of the modular expansion vs singular build. Savings in pre-production capex in Stage 1 vs DFS is only US$22M (US$140M vs US$162M) as the crushing capacity is 2.4Mtpa from the beginning.

Figure 5: Arcadia DFS and Staged OFS Metrics

Parameter	Unit	DFS	OFS Stage 1 Yrs 1-4	OFS Stage 1+2 Yrs 5-20	OFS Stage 1+2 Yrs 1-20	*Chng OFS Yrs 1-20 vs DFS*	*Chng OFS Yrs 5-20 vs DFS*
LOM	Years	15.5	4	16	20	*29%*	*3%*
Ore processed	**Mtpa**	**2.4**	**1.2**	**2.4**	**2.2**	***-10%***	***0%***
Head grade Li_2O ave.	%	1.22%	1.20%	1.19%	1.19%	*-2%*	*-2%*
Recovery Li_2O ave	**%**	**55%**			**51%**	***-7%***	*na*
Recovery tantalite	%	27%			27%	*0%*	*na*
Petalite 4% tech grade	ktpa	98	42.5	95.5	86	*-12%*	*-3%*
Petalite 4% chem grade	ktpa	24	10.6	23.9	21.5	*-10%*	*0%*
Petalite 4% total	**ktpa**	**122**	**53.1**	**119.4**	**107.5**	***-12%***	***-2%***
Spodumene 6%	**ktpa**	**173**	**73.8**	**146.0**	**133.3**	***-23%***	***-16%***
Tantalite 25% Ta2O5	klbspa	696			612	*-12%*	*na*
Capex - Pre production	**US$M**	**162**	**140**	**72**	**212**	***31%***	***na***
Capex - Sustaining	US$M	35			39	*11%*	*na*
Cash costs incl. royalty	US$/t	344			397	*15%*	*na*
AISC incl. royalty	**US$/t**	**352**			**402**	***10%***	***9%***
Petalite 4% tech grade	US$/t	894			955	*7%*	*na*
Petalite 4% chem grade	US$/t	483			490	*1%*	*na*
Spodumene 6%	US$/t	701			735	*5%*	*na*
Tantalite 25% Ta2O5	US$/lb	19			21	*12%*	*na*
EBITDA ave	**US$M**	**114**	**69**	**107**	**97**	***-15%***	***-6%***
NPV_{10} post-tax	**US$M**	**645**			**408**	***-37%***	*na*
IRR post -tax	**%**	**70%**			**34%**	***-51%***	*na*
Payback	years	1.5			5.4	*260%*	*na*

Source: Company.

Expect better metrics from upcoming Direct-to-2.4Mtpa OFS

- Unsurprisingly, PSC expects a substantial improvement in project economics in the Direct-to-2.4Mtpa OFS due in the current quarter, which we anticipate will be the favoured approach. Since the OFS study was initiated, lithium markets have staged a vigorous recovery, evidenced by rising EV sales and lithium prices, and strong appetite for both new project funding and offtake. We believe the Direct OFS will be more palatable to both investors and offtakers, and demonstrate superior metrics, especially IRR and NPV.

INFRASTRUCTURE

Ready access to infrastructure, services, and workforce

- Arcadia is located only 38km from Zimbabwe's capital Harare, with proximate access to skilled and semi-skilled workforce, as well as services. The company has secured power via an agreement with the Zimbabwe Electricity Transmission & Distribution Company. Primary supply will be from grid hydroelectric power distributed via a substation 10km from Arcadia, to be connected by a spur line. Water requirements will be sourced from a combination of on-site bores and collected surface water from catchments. Additional availability is via the Chinyika dam less than 4km from Arcadia.
- A 22km road (12km gravel – to be upgraded – and 10km tar) links to the sealed highway to both Harare and Beira port in Mozambique, 580km away. Product will be transported by road to Beira. The port has ample capacity of 1.36Mtpa. Tantalite concentrate will be exported through Walvis Bay, Namibia given its classification as Class 7 dangerous good due to radionuclides. However Beria Port and PSC are engaged in negotiations which may see tantalite shipped though Beira port, lowering costs.

CAPEX

Likely to reduce in Direct-to-2.4Mtpa OFS

- Stage 1 pre-production capex is US$141M to be incurred over 18 months, with additional Stage 2 capex US$72M bringing total to US$212M. Front-end primary crushing capacity will be sized at 2.4Mtpa from Stage 1, with Stage 2 capex mostly duplicating the DMS and flotation circuits. The increase over the DFS capex US$162M is due to the modularisation approach, as well as higher contingency and EPCM costs. Further increase in capex is mitigated by FEED being completed. Sustaining capex is US$39M, including closure costs of US$10M.
- We expect total capex to reduce in the direct-to-2.4Mpta OFS due to better efficiency from full scale plant built at outset.

Figure 6: Arcadia Capex US$M

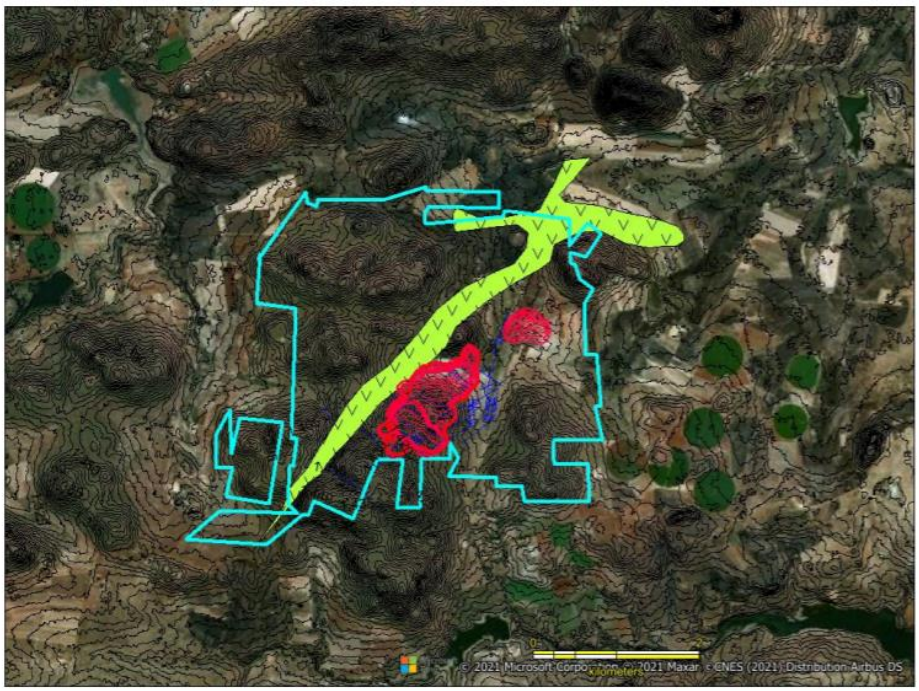
Item	Stage 1	Stage 2	Total OFS	DFS
Mine incl. pre-strip	4.9	0	4.9	
Process plant & infrastructure	131.4	61.8	193.2	
Tailings storage facility	4.4	9.9	14.3	
Total	**140.7**	**71.7**	**212.4**	**162.4**

Source: Company.

MINING & PROCESSING

- Both the Staged OFS and DFS only contemplated mining of JORC Reserves at 2.4Mpta. Mining is open-cut of two major pits – Main Pit and Satellite Pit – utilising drill and blast and conventional truck and shovel. Strip ratio is 3.4:1.

Figure 7: Arcadia Pit Outline



Source: Company.

- Major components of the flow sheet are crushing, grinding, dense media separation (DMS), milling, flotation, and magnetic separation. After grinding, ore is treated in DMS circuit where both fine and coarse petalite concentrates are produced. 80% of petalite, the coarse fraction, will meet technical grade specifications (Fe_2O_3 <0.05%), while the balance is chemical/battery grade fine petalite concentrate. Spodumene in ore is very fine grained and more interlocked with quartz relative to petalite, its recovery limited from DMS. Instead spodumene concentrate is produced after all ore post gravity recovery passes through a milling and flotation circuit.

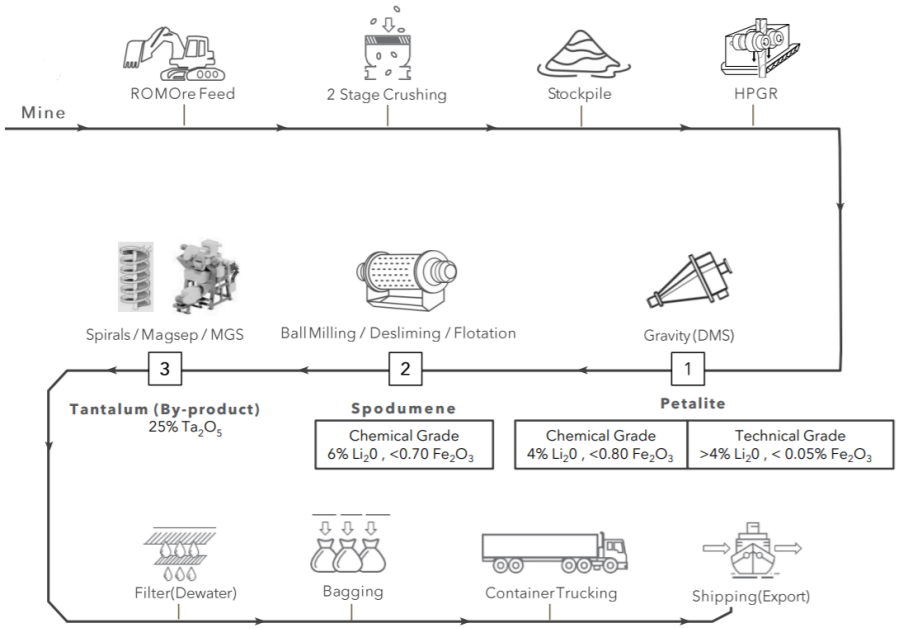
- Global lithium recovery is 51.3%, comprising spodumene recovery 78.2%, petalite 31.3%, while tantalite recovery is 27%. Concentrate grades are 6% for spodumene, 4% for both technical and chemical grade petalite, and a 25% tantalite concentrate.

Figure 8: Lithia Recoveries

Lithia	Recovery
Petalite 4% Technical	25%
Petalite 4% Chemical	6%
Petalite 4% Total	**31%**
Spodumene 6%	**78%**
Total	**51%**

Source: Company.

Figure 9: Arcadia Process Flow Sheet



Source: Company.

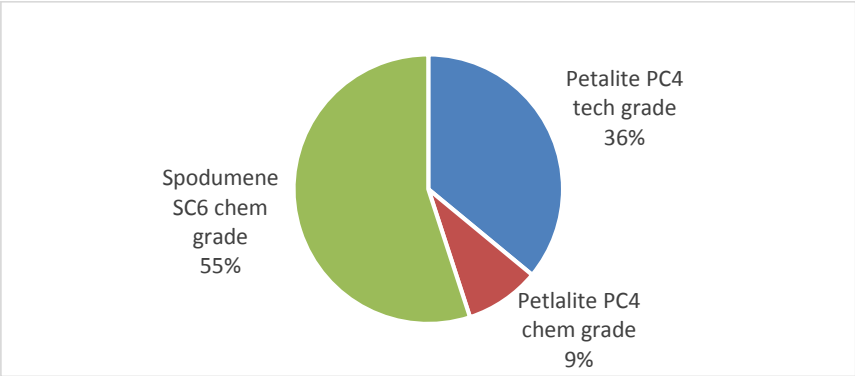
- Fe_2O_3 grade for spodumene will be 0.3% to 0.5%, with mica flotation and magnetic separation reducing iron levels. Tantalite by-product is produced from spirals and magnetic separation from the DMS and flotation rejects.

PRODUCT

Petalite and spodumene - technical and chemical concentrates

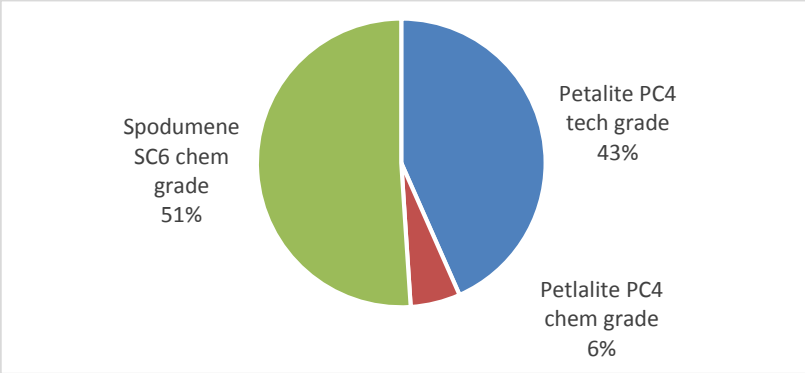
- Arcadia will produce three lithia concentrates – spodumene chemical grade, petalite chemical grade, and petalite technical grade, with an almost 50:50 split between spodumene and petalite in both production and revenue. Technical petalite is extremely low in iron and alkali impurities. Additionally Arcadia will produce 174klb pa of tantalite concentrate.

Figure 10: Arcadia Production by Li_2O Concentrate Type



Source: Company. Stage 2 OFS.

Figure 11: Arcadia Revenue by Li_2O Concentrate Type



Source: Company. Stage 2 OFS.

MARKETING

Targeting both high-growth battery and premium-price glass-ceramic markets

- All Arcadia technical grade petalite will be marketed to the glass ceramics market, to optimise pricing and revenues. While petalite contains less lithia (maximum 4.9% - its formula is $Li_2O.Al_2O_3.8SiO_2$) than spodumene ($Li_2O.Al_2O_3.4SiO_2$, maximum 8%), it has typically lower iron content. This makes it highly sought after by the glass-ceramics industry where iron causes discoloration. Low iron in this context is <0.05% for technical petalite. Alkaline content is also important – with <1.0% K_2O + Na_2O requested by many glass-ceramic users, as high alkali can cause clinkers in kilns.

Figure 12: Arcadia Lithium Concentrate Products

Product Grade	Spodumene Chemical	Petalite Chemical	Petalite Technical
Market	Battery & industrial	Battery & industrial	Glass & ceramics
Li_2O	>6.0%	>4.0%	>4.0%
Fe_2O_3	<1.0% (0.3 % to 0.5%)	<0.8% (0.3% to 0.7%)	<0.05%
Na_2O	<0.50%	<1.0%	<0.50%
K_2O	<0.50%	<1.0%	<0.50%
Pricing - OFS	US$735	US$435	US$994
Stage 2 prod'n avg.	146	24	96

Source: Company; Lycopodium.

- Arcadia's technical grade petalite has passed laboratory qualification and specification tests, including low iron and alkali limits, to date with two of the world's largest glass-ceramic manufacturers in Europe, as well as for ceramic production in China and Japan. The next major tests involve production kiln performance, which require larger volumes. To this end PSC recently commissioned a 5ktph pilot plant to produce up to 100t bulk petalite concentrates for marketing and product qualification. First shipment occurred end 2QCY21 to Sibelco, for on-delivery to its customers across Europe and Asia.

- Chemical spodumene and petalite have been successfully tested in the production of battery grade lithium carbonate >99.5%. These will be marketed to lithium chemical converters to make lithium chemicals including lithium hydroxide and lithium carbonate. This is currently driven by EV market, including battery and cathode manufacturers.

GLASS-CERAMICS & PETALITE

- Petalite confers a number of favourable attributes for glass and ceramics manufacture, including:
    - Reduces melting point and viscosity by use of lithium as flux, promoting moulding and shaping. This improves productivity, reduces energy costs, and extends furnace life.
    - Prevents discoloration and improves whiteness by the presence of low iron, making it suitable for white and transparent products.
    - Reduces thermal expansion, allowing glass to expand or contract without compromising its structure.
    - Improves strength, acid, hardness, glossiness, and corrosion and heat resistance of ceramics.
- Ceramic uses include bricks, pipes, roofing, sanitary ware, abrasives, grinding media, tiles, cookware, and tableware, while glass materials are in automobiles, containers, buildings, solar energy, pharmaceuticals, optical, and fibreglass displays. Major glass-ceramic uses for petalite include glaze, fibre glass, cooktops and stoves, sanitaryware (vitreous china), specialty glass, metallurgical powders, and porcelain tiles. While well established for ceramics and black glass, clear glass represents potential new market for petalite, especially if it has high lithia to iron ratio, and can enjoy a pricing premium.

PRICING

30% premium for technical petalite over spodumene

- Roskill and Benchmark state that technical grade petalite receives a price premium over chemical grade spodumene due to its higher lithia to iron ratio. Additionally, technical petalite is valued for its levels of silica and alumina (otherwise these have to be purchased separately by glass-ceramic manufacturers), and its low level of alkali impurities. PSC has advised Roskill that under the offtake agreement with Sibelco it expects to receive 70% of determined customer price, with Sibelco receiving 30% for value-add activities (eg.. logistics, milling, bagging, sales and marketing). PSC's received price is equivalent to receiving a 30% premium to spodumene.

Premium already received for Sibelco bulk order

- PSC also announced it received a 40% premium to spodumene price for a bulk Arcadia petalite order from Sibelco placed in May 2021, reinforcing the pricing premium. Within the glass-ceramics market, there is further premia applied, with that in the clear glass market higher than the ceramics and black glass market due to higher lithia to iron ratio thresholds required. Lithium carbonate has been traditionally supplied to clear glass market due to high lithia to iron ratio threshold.

OFFTAKE

83% of annual Arcadia Stage 2 offtake accounted for

- PSC has binding offtake agreements with Sinomine Resources Exploration (Sinomine) and SCR-Sibelco NV (Sibelco). The Sinomine offtake is flexible such that spodumene quantity can be increased and petalite decreased, provided total contained lithia units remain unchanged. We expect at this stage that PSC would maximise spodumene sales to Sinomine, since Sibelco's

offtake is only for petalite. This would mean 83% of offtake wold be accounted for. We show examples of pre and post-adjusted offtake quantities in Figure 13.

Figure 13: Arcadia Offtake ktpa

Pre-Sinomine adjustment			
Offtaker	**Spodumene**	**Petalite**	**Total**
Sinomine	40	112	152
Sibelco	0	100	100
Unaccounted	106	0	106
Total covered	**40**	**119**	**159**
Arcadia production	146	119	265
% Covered	**27%**	**100%**	**60%**
Post-Sinomine adjustment			
Sinomine	102	20	121
Sibelco	0	100	100
Unaccounted	44	0	44
Total covered	**102**	**119**	**221**
Arcadia production	146	119	265
% Covered	**70%**	**100%**	**83%**

Source: Company; Foster Stockbroking estimates.

Sinomine

- Sinomine is a Chinese commodities and chemicals trader, geotech services provider, and lithium carbonate and hydroxide producer, listed on the Shenzhen Stock Exchange. Its agreement with PSC is to purchase 40ktpa spodumene and 112ktpa petalite (280kt and 784kt over seven years). We expect the offtake to adjusted as per the flexibility agreement to 102ktpa spodumene and 20ktpa petalite, so as to maximise Sibelco's petalite offtake. Pricing of spodumene and petalite are linked to lithium carbonate pricing. Sinomine is also a substantial shareholder of PSC.
- Sinomine's lithium chemical converters produce lithium hydroxide and lithium carbonate via its wholly owned subsidiary Dongpeng New Materials. The company is experienced in African countries including Zimbabwe, and has a head office in Harare.

Sibelco

- Sibelco is a Belgium-headquartered global specialty materials supplier, with over 100 sites in more than 30 countries, generating annual revenues of €3.5b. Its agreement with PSC is for up to 100ktpa (700kt over seven years) for technical grade petalite. Its specifications are >4% Li_2O and <0.06% Fe_2O_3, max 0.5% Na_2O and max 0.5% K_2O, which Arcadia satisfies. Sibelco is the largest distributor of technical grade petalite in Europe and possibly the world.
- In addition to petalite, Sibelco's ceramics and glass portfolio includes clays, silicas, kaolin, feldspar, petalite, alumina, calcium carbonate, dolomite, manganese, high purity quartz, low iron silica, and kaolin. Sibelco's customers span the renewable energy, mining, electronics, water purification, chemicals, transport construction, consumer goods and metallurgy industries.

Further offtake demand should see 100% covered

- PSC has stated it is in discussions with potential customer across Africa, Asia, and Europe which collectively account for 130ktpa of technical grade petalite consumption, as well in negotiations with potential customers across Japan, China, and Europe for the balance of spodumene.

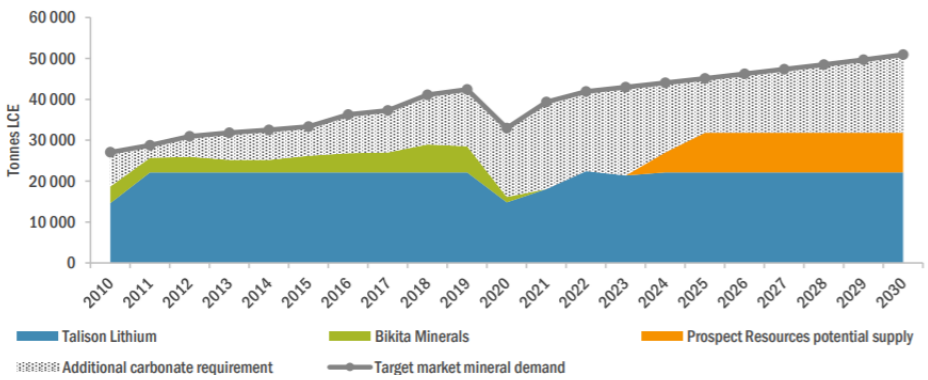
LITHIUM MARKET SIZE & GROWTH

Limited petalite supply, of which Arcadia's to be superior

- Roskill expects global lithium consumption to grow 18% pa reaching 1.85Mt LCE in 2030. This is driven by battery demand (22.9% CAGR) while the balance is from industrial and glass-ceramics (1.8% CAGR). However upside risk exists in the latter from fibre glass, such as used in wind turbines due to push in renewable energy, and glass-ceramics such as recent Apple smartphones.

- Spodumene is expected to dominate lithium concentrate supply, comprising 84% in 2020 and forecast to increase to 95% in 2030, with a dearth of new petalite supply. Petalite consumption has generally been restricted because of availability rather than demand. Globally only two producers of low iron lithium concentrates are suitable for glass-ceramics: Greenbushes technical grade spodumene and Bikita's petalite. Roskill estimates technical market is 650ktpa petalite or 65.5kt LCE (2019), about 17% of the total global lithium market

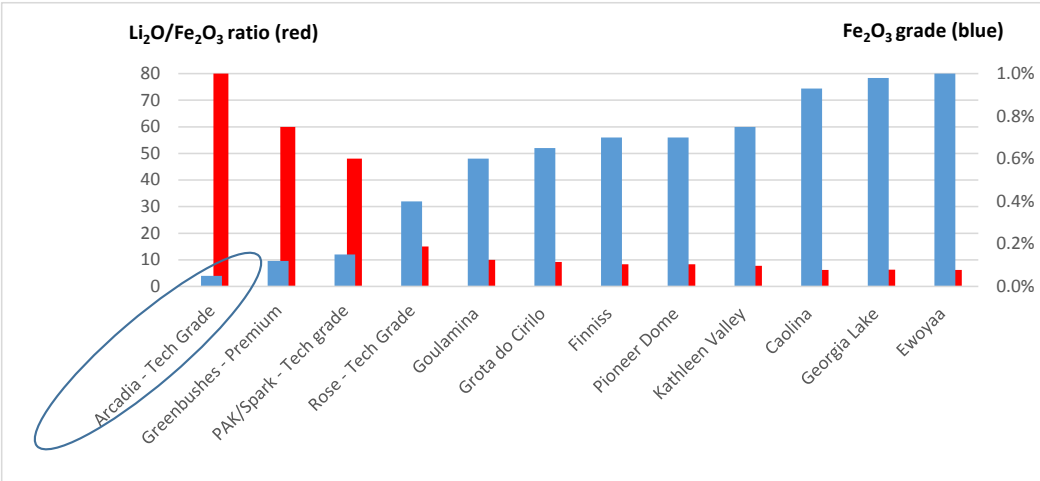
Figure 14: Forecast Technical Lithia Concentrate Supply and Demand



Source: Roskill.

- Of all projects in the pipeline, we believe Arcadia is the only to supply substantial quantity of technical grade petalite. We estimate Arcadia will have lower iron grade and a higher lithia-to-iron ratio than Greenbushes' technical grade spodumene. Only Critical Element's Rose and Frontier Lithium's PAK/Spark may be able to supply technical grade spodumene and petalite, but at inferior specifications and lesser quantities than Arcadia.

Figure 15: Fe_2O_3 Grades of Hard Rock Concentrate Products



Source: Companies.

Petalite can take share from lithium carbonate

- Only 18% of glass and ceramics is supplied by low iron petalite concentrate, the balance being met mostly by lithium carbonate and low iron spodumene from Greenbushes. Growth in share of petalite has been restricted by lack of supply. However petalite is more desired by glass-ceramics manufacturers for key costs and ESG advantages:
    - It already contains silica and alumina content which are used as flux. These need to be additionally purchased if using lithium carbonate. Arcadia's petalite concentrate contains approximately 17% alumina and 78% silica.
    - Lower carbon footprint from less energy consumption in its production.
- PSC's technical petalite could be consumed by market without need to displace lithium carbonate, and Benchmark Minerals Intelligence believes it can take market share. Arcadia's 96ktpa (or 9.5ktpa LCE) technical petalite would account for 15% of demand once Stage 2 is established towards the end of decade. A shortfall is still expected by 2030. There will also be competition from EV sector for carbonate.

COSTS

In lower half of cost curve

- We estimate AISC over LOM based on the Staged OFS – including royalties and sustaining capex - is US$437/t cif of product, or US$402/t fob. The latter was higher than the DFS' US$352/t fob. We believe two key factors were the staged approach which reduces economy of scale in Stage 1, and lower lithium recovery.

Figure 16: Arcadia Operating Costs US$/t

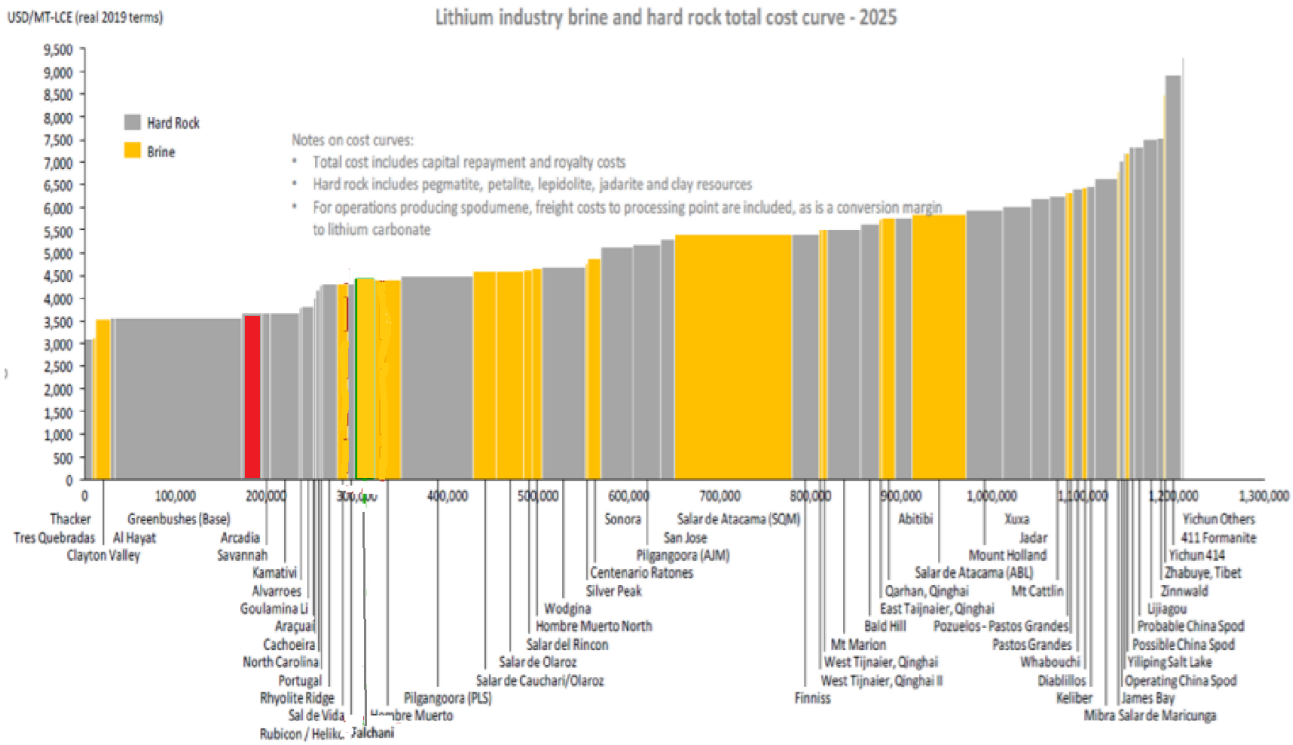
Item	DFS	OFS LOM
Mining	97	102
Processing	136	162
General, Admin & Services	32	43
Transport	70	85
Marketing & selling	30	40
Tantalum credit	-36	-54
C1	**329**	**378**
Royalty	15	16
Sustaining capex	8	8
AISC fob	**352**	**402**

Source: Company; Foster Stockbroking estimates.

Direct-to-2.4Mtpa OFS should result in lower unit costs

- The upcoming Direct OFS should show improvement in unit costs, by virtue of being full-scale from the outset. Arcadia has been estimated by Benchmark Minerals Intelligence to lie in the bottom quartile of the 2025 cost curve. Using the recent OFS's costs, we estimate it would land approximately in the lower part of the 2nd lowest quartile/upper part of lowest quartile.

Figure 17: Lithium Cost Curve 2025



Source: Benchmark Minerals; American Lithium.

REGULATORY & PERMITTING

Fully permitted and favourable tax regime

- Arcadia has an EIA, Investment Licence, and Mining Grant approvals in place. Additionally the project has been granted Special Economic Zone status by the Zimbabwe Government, which provides zero tax for the first five years of the mine's operation and 15% thereafter vs standard 25% company tax; witholding tax exemption on dividends vs the standard 15%); and flexibility to bank foreign currency offshore (standard is domestic bank only).

Government incentive reduces royalties

- A state royalty of 7% comprising 5% lithium minerals export tax and 2% government royalty on is charged on revenue. However the company received a government incentive with removal of the 5% lithium export tax on the first five years. The Mineral Marketing Corporation of Zimbabwe additionally charges a marketing fee of 0.875%.

- The project was granted National Project Status in 2017 by the Zimbabwe government. It confers Arcadia a five-year window duty free to import equipment. In 2018 it was recognised as a Priority Mining Development Project by the Office of the President and Cabinet of Zimbabwe.

- In addition to granted mining permit, surface rights have been secured by PSC, via a Government approved farming lease agreement with landowners, entitling rights to access, construct, and operate a mine. In the interim PSC has developed land for farming as part of supporting the local community.

Experienced mining sector

- Zimbabwe is a major mining country. In 2018 mining was 60% of country's exports and 13% of revenue. Miners in Zimbabwe include Anglo America, Implats, Zimplats, Caledonia Mining, and Sibanye Stillwater. Commodities mined include lithium, gold, diamonds, palladium, nickel, chrome, and platinum. At its peak production, Zimbabwe has been the 5th largest lithium producer in the world, and the Bikita mine has been a major global supplier of petalite.
- Zimbabwe is landlocked and bordered by Zambia, Mozambique, South Africa, and Botswana. Largest and capital city is Harare and the national population is 15M. Official languages number 16, including English which is one of the most spoken. RTGS dollar is the national currency.

COMMODITY & PRODUCTION FORECASTS

- We show our commodity forecasts in Figure 18. Our LT nominal cif prices are US$1,034/t, US$795/t, and US$535/t for technical grade petalite, chemical grade spodumene, and chemical grade petalite. On a fob basis, our forecasts are 7-12% lower than the OFS assumptions. We forecast first production in FY24e, with FY25e the first full year of Arcadia production.

Figure 18: Arcadia Commodity and Production Assumptions

Commodity assmptns	Unit	FY21e	FY22e	FY23e	FY24e	FY25e	FY26e
Petalite 4% TG cif	US$/t	750	1,091	1,197	1,125	1,062	1,034
Spodumene 6% CG cif	US$/t	577	839	921	865	817	795
Petalite 4% CG cif	US$/t	389	565	620	583	550	535
Tantalite	US$/lb	85	87	89	91	93	95
A$	US$	0.72	0.75	0.75	0.74	0.74	0.74
Production							
Ore processed	Mtpa	0	0	0	1.2	2.4	2.4
Head grade Li_2O	%	0	0	0	0.67%	0.97%	1.23%
Petalite 4% TG	kt	0	0	0	17	77	103
Spodumene 6% CG	kt	0	0	0	17	73	143
Petalite 4% CG	kt	0	0	0	4	17	24
Tantalite cont.	klbs	0	0	0	88	173	173
AISC cif	US$/t	-	-	-	298	423	461

Source: Foster Stockbroking estimates.

FINANCING

We assume 50:50 debt: equity mix

- We expect PSC will finance Arcadia via a mix of equity and debt, and assume a 50:50 mix in our model. We estimate total funding required will be A$330M (US$244M) to cover capex, corporate, interest, and working capital costs. Given the funding appetite for lithium in the market, we do not expect any difficulty for either mix. Previously the company had mandated African Export-Import Bank (Afreximbank) to arrange and syndicate US$143M debt facility, of which the bank itself was willing to provide US$75M of the facility itself. PSC also received a US$10M export facility from the Zimbabwe Reserve Bank. Finally the company has a US$10M prepayment agreed to be paid upon installation of ball mill with Sinomine.

Partnering process to provide further options

- PSC is prioritising the partnering process as the potential source of funding given interest expressed by a number of parties in a competitive environment that favours lithium asset owners. Funders are also likely to assist both PSC and Arcadia strategically in terms of operation expertise, growth opportunities, downstream processing, and/or offtake.

ARCADIA TIMELINE

Commissioning in mid-FY24e

- We see the major milestones for Arcadia on the timeline below. We anticipate the Direct-to-2.4Mpta OFS and partnering process to complete by end CY21, FID in 1QCY22, and start of construction 2QCY22. We envisage an 18-month construction period and first production in 4Q CY2023.

Figure 19: Arcadia Milestones

Milestone	CY2021	CY2022	CY2023
Direct 2.4Mtpa OFS	4Q		
Completion of Partnering process	4Q		
Financing and FID		1Q	
Start of construction		2Q	
Commissioning and first product			4Q

Source: Foster Stockbroking estimates.

OTHER PROJECTS – RARE EARTHS

- The company's other asset of note, albeit very early stage is the Chisanya rare earth elements and phosphate project (PSC 70%), also located in Zimbabwe. Initial soils sampling has highlighted rare earth anomalies, with 20% of value attributable to neodymium and praseodymium (NdPr) which are key inputs into magnets. Cerium, lanthanum, and niobium have also been identified. The project is hosted in phosphate bearing carbonatite, and historically explored since 1950s with 15% P_2O_5 from historic trenching.

PSC EARNINGS FORECASTS

- We forecast first revenues and earnings for PSC in FY24e when Arcadia is commissioned. We expect full ramp up in FY25e. We forecast Arcadia EBITDA of A$116M, or US$86M (real) over LOM vs OFS Stage 2 of US$97M. The key reason for the difference is lower commodity price assumptions.

Figure 20: PSC Earnings A$M

P&L	FY21e	FY22e	FY23e	FY24e	FY25e	FY26e	FY27e
Arcadia	0	0	0	60	226	337	249
Unallocated corp	0	0	0	0	0	0	0
Revenue	**0**	**0**	**0**	**60**	**226**	**337**	**249**
Arcadia	0	0	0	26	115	187	140
Unallocated corp	3	5	5	5	5	5	5
Costs	3	5	5	31	119	192	145
Arcadia	0	0	0	34	111	149	109
Unallocated corp	-3	-5	-5	-5	-5	-5	-5
EBITDA	**-3**	**-5**	**-5**	**29**	**106**	**144**	**104**
Arcadia	0	0	0	8	17	17	18
Unallocated corp	0	0	0	0	0	0	0
D&A	0	0	0	8	17	17	18
Arcadia	0	0	19	26	95	132	91
Unallocated corp	-3	-5	-5	-5	-5	-5	-5
EBIT	-3	-5	-5	21	90	127	86
Net interest expense	0	0	5	10	11	10	7
PBT	-3	-4	-10	11	78	118	79
tax	0	0	0	0	0	0	0
NPAT pre-minorities	**-3**	**-4**	**-10**	**11**	**78**	**118**	**79**
Minorities	0	0	0	1	10	15	10
NPAT attributable	**-3**	**-4**	**-10**	**10**	**68**	**102**	**69**
Cash flow							
EBIT	-3	-5	-5	21	90	127	86
Chng in WC	0	0	0	-4	-7	-3	3
Share expenses	0	0	0	0	0	0	0
Net interest	0	0	-5	-10	-11	-10	-7
Tax	0	0	0	0	0	0	0
Capex	-4	-4	-196	-101	-3	-3	-3
Net free cash flow	**-6**	**-8**	**-205**	**-93**	**69**	**112**	**80**

Source: Foster Stockbroking estimates.

VALUATION

Risked valuation of PSC of $0.82/share

- We have derived a risked NPV_{10} (nominal) of $0.82/share. Our NPV has been discounted by 38% to account for debt: equity funding of 50:50, of which equity portion is funded at near current share levels. Given recent strategic lithium company placements being conducted at premium to share prices, we expect upside to our risked valuation. Our unrisked valuation, which assumes equity is issued at inherent valuation – i.e. not dilutive - is $1.49/share.

Unrisked Arcadia valuation of US$491M

- We derive an unrisked valuation of Arcadia (100%) of US$491M which is above that of the OFS of US$408M. The key difference in our assumptions vs OFS are: 1) 10% discount rate on nominal cash flows vs OFS' 10% on real, and 2) A direct-to-2.4Mtpa (not staged) approach. This more than offsets our lower lithium price assumptions.

Figure 21: PSC Valuation

Segment	Unrisked A$M	A$/share	Risked A$M	A$/share	Risk Factor
Arcadia Reserves (87%)	577	$1.00	462	$0.58	80%
Other Acadia Resources & expl'n	115	$0.20	34	$0.04	30%
Chisanya	15	$0.03	5	$0.01	30%
Corporate & working capital	-46	-$0.08	-46	-$0.06	100%
Future equity	165	$0.28	165	$0.21	100%
Options-in-money at val	11	$0.02	11	$0.01	100%
Net cash	26	$0.04	26	$0.03	100%
Total	**719**	**$1.49**	**657**	**$0.82**	**55%**
Shares now M	429		429		
Future equity M	111	issued at unrisked val	330	issued at current s'price	
Options-in-money at val M	40		40		
Fully diluted shares M	**580**		**798**		

Source: Foster Stockbroking estimates.

Upside to our valuation and earnings

- While we assume a Direct-to-2.4Mtpa operation, our unit cost and capex assumptions are similar to that of the Staged OFS, meaning we have not captured the benefits of a scaled-up operation from the outset on these parameters. These are likely to improve in the Direct-to-2.4Mtpa OFS, representing upside to our valuation, as well as to earnings.

SENSITIVITY

Every $US50/t change in SC6 adds $0.12/share to risked valuation

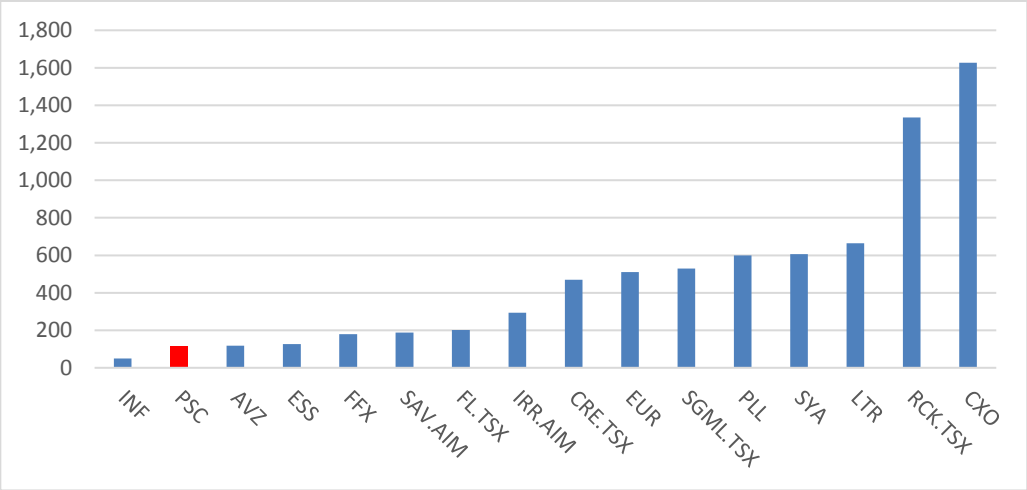
- From our sensitivity analysis, each US$50/t increase in the chemical spodumene price (and resultant increase in technical petalite price applying the 30% premium), adds 12cps and 26cps to our risked and unrisked valuation of PSC.

PEERS COMPARISON - SUPPORTS OUR ANALYSIS THAT PSC IS UNDERVALUED

Valuation below peers on key metrics

- We note that PSC is trading at marked discount to other hard rock lithium explorers and developers when compared on an EV/JORC Resource basis: A$90/t of contained lithium carbonate equivalent (LCE) vs mean of A$476/t for group average. We also note that PSC is trading at discount to all the other listed African peers (FFX, AVZ, and IRR.AIM).

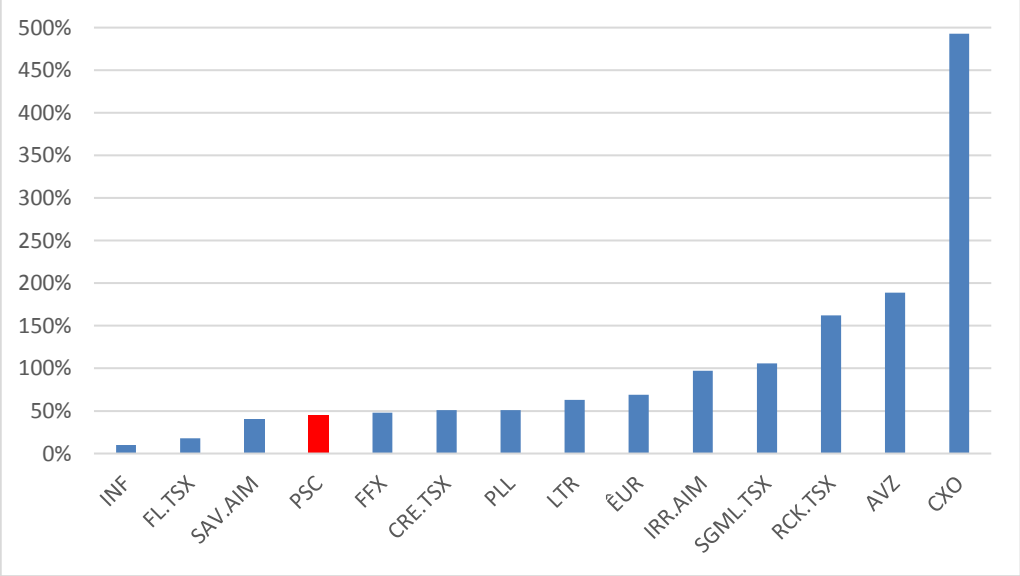
Figure 22: Hard Rock Lithium Companies EV/Resource Multiples (A$/t LCE)



Source: Companies; Foster Stockbroking estimates.

- As a percentage of market capitalisation over project NPV, PSC is also at discount to peers, trading at 45% vs group average of 103%. Again it is the lowest of the African peers.

Figure 23: Hard Rock Lithium Companies Mkt Cap/Project NPV



Source: Companies; Foster Stockbroking estimates

- Both these comparisons support our DCF valuation in the context of showing PSC is undervalued. No doubt there is a discount for Zimbabwe risk given the turmoil of the Mugabe years, and for the market's relative unfamiliarity with petalite vs spodumene. However this may unwind as the country continues demonstrating relative stability post-Mugabe, and greater awareness of the inherent value of technical grade petalite is acknowledged.

CORPORATE INTEREST

Partnering process underway likely to catalyse funding

- PSC has received interest from a number of parties regarding funding and development of Arcadia, and recently formalised a process for submission of proposals. This should attract key players from the downstream lithium chemicals and glass-ceramics industries, with PSC to capitalise on the competitive tension present in a seller's market. Such a partner could markedly assist in funding the project, facilitating further offtake, and expediting FID/construction of the project. We expect a decision by end CY21.
- Previously announced expressions of interest include Sinomine examining either acquiring 51% of PSC, or purchasing 100% of the project, and a MoU with Uranium One Group concerning potential investment in PSC or the project, and offtake for at least 51% of lithium production.

Project transactions accelerate in 2021

- Meanwhile 2020-21 has seen at least eleven transactions involving projects, with an acceleration over the last five months including three takeovers and five equity interest acquisitions (outright or via sole funding earn-ins). The average multiple of $230/t is above where PSC is currently trading at $90/t.

Figure 24: Recent Lithium Project Transactions

Date	Company	Project	Acquirer	Type	EV/Resource LCE Implied (A$/t)
Feb 2020	LAC.TSX	Cauchari-Olaroz	Ganfeng	Equity interest	106
Dec 2020	Tianqi	Greenbushes	IGO	Equity interest	819
Jan 2021	SYA	Authier (SYA Quebec)	PLL	Equity interest	50
Jun 2021	FFX	Goulamina	Ganfeng	Equity interest	84
Jul 2021	IRR.AIM	Ewoyaa	PLL	Equity interest	496
Aug 2021	BCN.AIM	Sonora	Ganfeng	Takeover	61
Sep 2021	AVZ	Manono	CATH	Equity interest	84
Sep 2021	ML.TSX	Pastos Grandes	LAC.TSX*	Takeover	100
Sep 2021	Guo Ao Lithium	Moblan	SYA/PLL	Equity interest	363
Sep 2021	INR	Rhyolite Ridge	Sibanye-Stillwater	Equity interest	1,075
Oct 2021	NLC.TSX	Tres Quebradas	Zijin	Takeover	138
				Average ex-INR**	**230**

Source: Companies; Foster stockbroking estimates.
**Other bidders for ML.TSX include Ganfeng and CATL, both trumped by LAC.TSX to date.*
***INR excluded due to substantial boron co-product.*

PROJECT GROWTH OPTIONS

- PSC has four key plans of growth opportunities for Arcadia, which we have not captured in our valuation, and represent upside of the company:
- **Downstream processing.** In 2016 PSC considered building a lithium carbonate facility in Zimbabwe and had commenced a PFS on a lithium carbonate and hydroxide plant to take Arcadia production. Also as part of offtake and framework agreement with Sinomine considered PSC building a lithium carbonate plant (Zimbabwe or elsewhere) to process 50% of petalite concentrate.
- **Petalite flotation – increased recovery, higher pricing, and widening market reach.** The OFS assumes petalite recovered using only DMS and not flotation, to minimise technical risk. However petalite flotation may be introduced at later stage to Arcadia, once the operation is established and the process defined. Met tests on Reserves show that adding flotation can

increase petalite recovery to >60% from 31%, as well as increase lithia units from approximately 4.1% to 4.5%, which increase pricing. Finally the higher lithia-to-iron ratio means it may be marketable to the clear glass market, not just back/coloured. Issues to address in petalite flotation include higher water use and different reagents vs spodumene. We expect PSC will examine the upside offered from flotation once the Arcadia operation is established.

- **Other by-products.** Tantalite is the only by-product commercialised in the OFS**.** However the flow sheet undertakes mica flotation as part of beneficiating spodumene, but no value is attributed to the former. We note some other hard rock developers have examined quartz, mica, and feldspar as by-products for projects, with sales usually domestic. Potential sales of mica, or quartz and feldspar from petalite and spodumene flotation tailings may be possible.
- **Extend mine life**. There is potential to increase mine life or expand capacity beyond 2.4Mtpa. Reserves are currently only 69% of Measured and Indicated, and 59% of total Resource by ore, while the Exploration Target of 80 to 100Mt at 1.2% to 1.5% Li_2O is above the current Resource of 72Mt. Lycopodium reports that additional strike exists for a further 3.5km, not currently held by the company, as well as in potential for further ore bodies in the area.

RECOMMENDATION & PRICE TARGET

Buy, 12-month PT $0.82/share

- We initiate on PSC with a Buy recommendation and 12-month price target of $0.82/share based on our risked NPV_{10}. We have shown Arcadia as a world class asset, both in size and its assemblage of spodumene and technical grade petalite, in a strong market with appetite for the project to be developed. Our DCF analysis that the PSC share price is trading below value is also supported when comparing the company with other peers.
- Catalysts for the stock are 1) Direct-to-2.4Mtpa OPFS; 2) Outcome of partnering process; 3) Funding and FID; 5) Corporate & M&A activity.

DIRECTORS

- **Mark Wheatley.** *BEng (Chem Eng Hons), MBA.* **Non-Executive Chairman**. Appointed January 2021. 15 years' director and chairman experience across resource companies. Previously held Chairman with Norton Goldfields, Xanadu Mines, and Gold One International. Also held executive roles with St Barbara and founding director of Uranium One.
- **Sam Hosack.** *BEng (Hons), MBA*. **Managing Director.** Appointed 2018. Third generation Zimbabwean, residing in Western Australia. Experienced in delivering large scale mining, power and port projects. Previously 12 years with First Quantum Minerals in its projects team
- **Duncan (Harry) Greaves.** *BSc (Agri).* **Executive Director.** Appointed 2013. Fourth generation Zimbabwean and Managing Director of Farvic Consolidated Mines which operates Beatrice mine.
- **Gerry Fahey**. **Non-Executive Director**. Appointed 2013. Over 40 years' experience in local and intentional mining industry. Was Chief Geologist with Delta Gold and currently Director of Focus Minerals Ltd. Former Director of CSA Global and former member of JORC.
- **Zivanayi (Zed) Rusike.** *B.Accounting.* **Non-Executive Director.** Appointed 2013. Resident of Zimbabwe and previously Managing director of United Builders Merchants and Group Managing Director of Radar Holdings listed on Zimbabwe Stock Exchange.
- **Dev Shetty. Non-Executive Director**. Appointed 2020. Experienced mining executive and chartered accountant. Currently President and CEO of Fura Gems, and previous Group COO of Gemfields plc.
- **HeNian Chen**. **Non-Executive Director**. Served as Chairman of Changshu Yuhua Property Co Ltd since 2004 and Deputy Chairman of Afore New Energy technology (Shanghai) since 2007.

RISKS

The following risks may negatively impact the PSC share price:

- **Sovereign risk**. Any change in government, policy, legislation, or fiscal policy of Zimbabwe or Australia, may markedly impact the ownership, financing, permitting, or economics of the company's projects or its corporate profitability.
- **Commodity price risk.** Lack of rises, or declines, in spodumene, petalite, lithium hydroxide, lithium carbonate, or other lithium prices may negatively impact the potential to develop Arcadia, reducing the company's earnings potential.
- **Ownership risk.** Zimbabwe has historically required varying degrees of indigenous ownership of mine projects to varying extents. Any change in indigenous or foreign ownership laws of mine assets may negatively impact PSC's interest in Arcadia and the amount of profitability it may realise.
- **Development risk.** Problems may occur preventing PSC from developing its Arcadia project, including issues impacting permitting, financing, offtake, construction, or commissioning.
- **Financing risk.** To fund its Arcadia project the company may raise equity which may dilute shareholders, and/or borrow debt which it may not be able to service.
- **Economic and market risk.** Should global economic growth decline or share markets fall, or demand or growth slow for lithium ion batteries, electric vehicles, and glass-ceramic products, this may reduce the appetite for both PSC's commodity exposure and its shares.

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Specific disclosure: The analyst has received assistance from the company in preparing the report, including reviewing it for factual accuracy.

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Review disclosure: The report was authored by the analyst named on the front page of the report and was reviewed and checked by Matthew Chen, Research Analyst.

Disclosure review. All the disclosures in the report have been reviewed and checked by Keith Quinn, Compliance.