

22 August 2024

### Last Price

A\$0.105

### Valuation (12mths)

**\$0.25 (Initiation)**

### Implied return from valuation

Capital growth	138%
Dividend yield	0%
Total expected return	138%

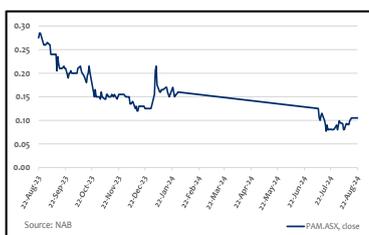
### Company data

Market capitalisation	A\$20.6m
Enterprise value	A\$19.1m
Issued capital (shares)	196.1m
Free float	75% <sup>m</sup>
Average daily vol (12mths)	105k
Price range (12mths)	A\$0.08-0.285
GICS sector	Materials

### Share price performance

Period	1 mth	3 mths	12 mths
Price (A\$)	0.17	na	0.28
Change (%)	-38	na	-62

### One year price chart



### Business description

Pan Asia Metals Metals Ltd (ASX:PAM) is a mineral exploration and development company.

It is focused on commodities that are critical to the global energy transition, specifically lithium and copper.

PAM's key assets are the Tama Atacama brine lithium project in Chile, the KT hard-rock lithium Pproject in Thailand, and most recently the Rosario copper project in Chile.

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# Pan Asia Metals Ltd (ASX:PAM)

## Mastering the art of low-cost Cu and Li

In our view, PAM offers strong and low-cost exposure to both hard-rock and brine lithium assets, as well as copper, at project stages ranging from early exploration through to development studies, with the option to expand downstream and/or partner with EV, battery and chemical producers. The new copper project, Rosario, is likely to yield interesting news flow into the end of 2024. We initiate coverage of PAM with a 12-month price target of A\$0.25/sh, with upside risk to \$0.38/sh.

### Key points

- New copper play in Chile:** PAM has opportunistically acquired an option to buy the **Rosario Project**, a widely mineralised but as-yet undrilled, Manto-type copper-silver system, close to existing mines and copper processing infrastructure. First drilling is expected before year-end.
- Lithium in Chile and Thailand:** At its mid-stage **Tama Atacama Project** in Chile, PAM holds c.1500km<sup>2</sup> of basin-margin salars with established prospectivity for brine- and clay-hosted lithium; while the feasibility-stage **RK Project** in Thailand hosts a JORC resource of 164.5kt LCE, which is likely to grow,
- Recently funded:** Through 2H23 and 1H24, PAM was confronted by hard market conditions for explorers, particularly in lithium. However, a \$761k placement (including \$250k Board contribution) sees it well-placed to pursue value-adding work, such as drilling at Rosario (Cu) and resource expansions at RK (Li).
- Value in copper and lithium:** Lithium prices declined precipitously in 2023-24 due to oversupply following record prices in 2022; however, the market is now rebalancing and prices should stabilise in 2025. The outlook for copper remains bullish as supply constraints and lack of discoveries start to bite.

### Investment View: 138% valuation gap to A\$0.25/sh

We initiate coverage of PAM with a Valuation of A\$0.25/sh, compared to the current share price of A\$0.105/sh, and with upside risk to \$0.38/sh. Like many lithium juniors in 2024, PAM's share price declined with the underlying commodity; however, for those like PAM who've survived the shake-out of this relatively new sector, and can continue with project development, FY25 should see improved conditions. The keys to closing this valuation gap: near-term drilling at the exciting Rosario copper target; progress on strategic negotiations to develop lepidolite lithium resources in Thailand; and granting of lithium exploration and operating permits in Chile.

### Production and Financial Forecasts

YEAR END: 31 December; reports US\$	Jun-24a	Sep-24F	FY-23a	FY-24a	FY-25F
Exploration and Evaluation (US\$m)	0.2	0.3	2.3	2.1	6.1
Staff and Corporate (US\$m)	0.3	0.3	2.2	0.9	1.0
Exploration/(Expl.+ Corporate) (%)	45.3	50.0	50.8	69.8	85.7
Shares on issue (pr end) (m shares)	186	196	168	211	244
Drilling - AC/RAB (m)	0	0	0	0	0
Drilling - RC/Diamond (m)	0	0	0	3,000	12,000
Land holding ('km <sup>2</sup> )	1,540	1,565	5	1,540	1,565
Capital Raisings (US\$m)	0.0	0.5	3.7	2.0	6.0
Funding from JV partners (US\$m)	0	0	0	0	0
Cash (US\$m)	0.5	0.5	0.3	0.2	1.5

# Pan Asia Metals (ASX:PAM)

## Overview

PAM is an exploration company with plans to be a producer of electric metals, including lithium and copper.

Its projects are in locations with geological prospectivity but also advanced infrastructure.

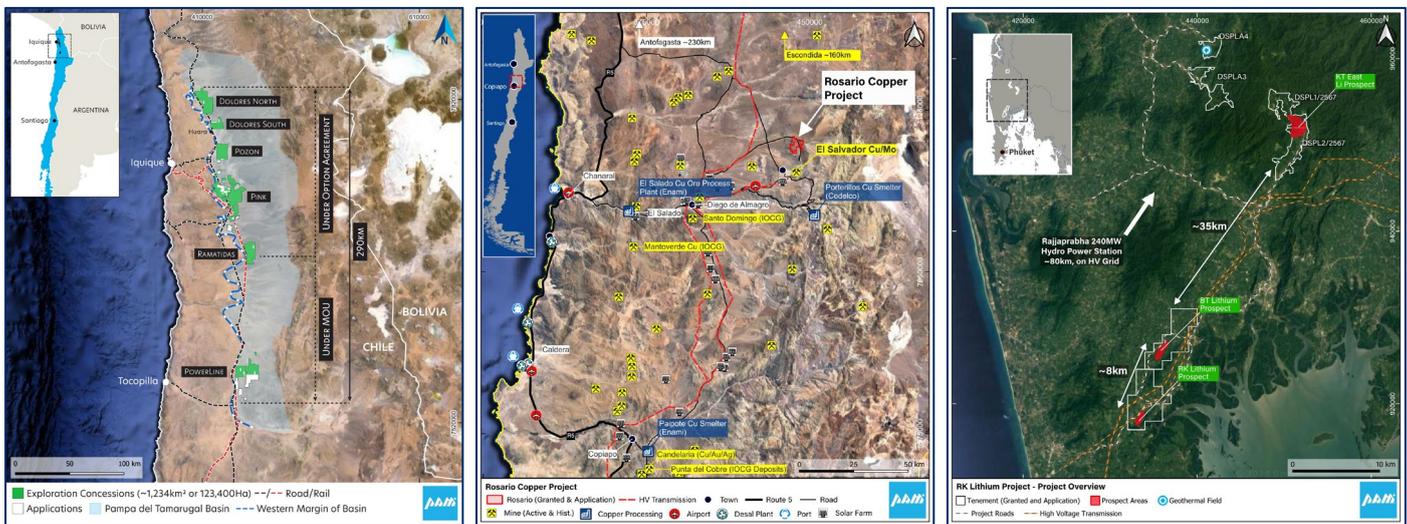
Pan Asia Metals (ASX:PAM) is a battery metals exploration and development company, with lithium and copper projects in South-East Asia and South America.

Its key assets are the RK Lithium Project, a lepidolite style lithium project located in southern Thailand; the Tama Atacama Lithium Project, a brine style lithium exploration project located in northern Chile; and the recently optioned Rosario Project, a manto type copper-silver project which is also in Chile.

PAM’s aim is to identify and develop battery and critical metals projects that could sit in the lower third of the cost curve, are in low-cost jurisdictions yet close to advanced industrial centres or emerging lithium chemical manufacturing centres, and which could have low to zero carbon footprints.

Project locations and high-level details are summarised below; more detailed descriptions are provided in subsequent sections.

Figure 1: PAM’s Projects - Tama Atacama (left) and Rosario (centre) in Chile (left) and RK in Thailand (right)



Source: Company reports

Figure 2: Key Projects

Project	Ownership	Metal	JV Partner	Target Type	Area (km <sup>2</sup> )	Project Status	Location
RK	100%	Li, Rb	None	Pegmatite	5	Feasibility	Thailand
Tama Atacama	100%*	Li	None	Brine, clay	1535	Early/Mid Expl.	Chile
Rosario	100%*	Cu, Ag	None	Manto/porphyry	24	Early/Mid Expl.	Chile

\*After completing options and earn-ins

## Valuation – A\$0.25/sh with upside risk to \$0.38/sh

We are valuing PAM's mineral assets on the following basis:

- **RK Lithium Project** – industry peer EV/resource ratios (\$kg/LCE);
- **Tama Atacama Lithium Project** – a comparable transaction in \$/ha; and
- **Rosario Copper Project** – the cost method, based on expected two-year spend.

**Our initial Valuation of PAM, based on industry comparables and project costs, is \$0.25/sh, with upside risk to \$0.38/sh.**

These then form part of an overall **Sum of The Parts (SOTP) valuation for PAM**, adjusted for corporate costs and net cash in the usual way. **The full valuation table is shown in Figure 3.** Further details of the asset valuations are described in **Appendix 2.** The estimates used in this valuation are broad, but until PAM has advanced economic studies that allow for cash flow analysis, they are the best way to value the company.

**The message here is very clear** - based on either RK (\$0.17/sh) or Tama Atacama (\$0.08/sh) alone, the stock could be considered inexpensive at the current share price of \$0.105/sh – and considering both, with the newly added value of Rosario, **we are very comfortable with an Initiation base-case Valuation of \$0.25/sh and with upside risk to \$0.38/sh.**

**Figure 3: PAM valuation**

PAM.ASX	A\$m	A\$sh	Comment
RK Lithium Project, Thailand	31.8	0.16	Resource plus 25% of Exploration Target at 1% in-ground LCE value
Tama Atacama Lithium Project, Chile	15.1	0.08	At 5% of comparative Eramet transaction value
Rosario Copper Project, Chile	9.0	0.05	Estimated 2-year exploration spend
Cash	1.5	0.01	Post Aug'24 raising of A\$761k @ A\$0.072/sh
Debt	-0.9	0.00	Convertible note (16% pa, conversion @ 15cps, 12mths from Mar'24).
Corporate	-8.0	-0.04	NPV for 5yrs at 10% discount
<b>Total</b>	<b>48.4</b>	<b>0.25</b>	<b>Base case</b>
\$/sh Upside Valuation		0.38	Plus 50% of KT Exploration Target value; and increase brines to 10% of Eramet value
Shares (m)		196.1	Post Aug'24 raising

Source: Company reports, GBA Capital

**For PAM as an explorer and developer, the key to increasing the share price is to generate strong news flow (drilling, assays) and reach project milestones such as resource expansions, commercial agreements and advanced studies that will allow for cash-flow based valuations.**

## Likely share-price catalysts (2H24/2025)

Strong news flow will be required to drive PAM's share price to the level of our valuation.

### Rosario Copper

**Exploration:** geophysics and surface sampling, leading to RC and Diamond drilling in 2024.

### RK Lithium

**Resource expansion:** via upgrading the Exploration Target at BT, and drilling KT East.

**Studies and partnerships:** advance feasibility studies of lepidolite production, potentially in JV with strategic partners in lepidolite processing; and progress local conversations about downstream offtake of LCE and use of byproducts such as tailings.

### Tama Atacama Lithium

**Exploration:** testing for lithium-bearing aquifers, ideally leading to resource definition.

**Metallurgy and testing:** evaporation test work to inform studies of lithium production. Submission of bulk volumes for evaluation by Direct Lithium Extraction (DLE) providers.

**Growth:** progress permitting, and assess acquisition of additional lithium-prospective areas, both at Tama Atacama and elsewhere in the Lithium Triangle.

# Asset Summary

## Lithium in Chile

### Tama Atacama Lithium Project

PAM says the Tama Atacama Lithium Project is “one of the largest and most strategically placed lithium brine projects in South America”.

Tama Atacama is focused on the lithium prospective western margin of a sedimentary basin in the northern Atacama Desert.

The project is comprised of six areas in northern Chile, covering ~1,535km<sup>2</sup> across three salt flats (salars) on the prospective western margin of the Pampa del Tamarugal Depression (or basin) of the northern Atacama Desert. Of this area, 1234km<sup>2</sup> is covered by granted Exploration Concessions. PAM holds these granted areas under a blend of vendor Option Agreements (1036km<sup>2</sup>) for 100% and MoU’s (263km<sup>2</sup>).

### Exploration model and work to date

The western margin comprises the lowest section of the Depression, with perhaps the greatest prospectivity for salars. Circa 850km<sup>2</sup> is situated in the north-western section of the Depression, which has a strike length of 170km, of which a large portion is salt flat with highly anomalous Li in surface assays.

PAM is exploring for Li-enriched brines at depth in the basin, guided by anomalous Li values in surface salt crusts.

The remainder of PAM’s holding is the PowerLine prospect, which is under MOU and sitting in the south-western section of the Depression.

The exploration model is to look for lithium rich brines occurring at depth across much of the basin. The presence of salars on the western margin with elevated lithium in the salt crusts, as well as in nearer surface brines, supports this model. The geochemical signature of these surface salt crusts is similar to that of Salar de Atacama.

Figure 4: Graphic showing the layout of the Tama Atacama Project



The key target is Project Pink, which has known Li mineralisation.

Source: Company report

**Project Pink is a focus, as it has known lithium mineralisation.**

**PAM's exploration strategy is supported by previous work of other explorers in the district.**

**In line with PAM's strategy of exploring in areas with developed infrastructure, Tama Atacama is serviced by road, rail, port and power.**

**To further develop Tama Atacama PAM requires operation contracts or CEOLs from the Chilean Government – this process has started.**

**The key focus area is Project Pink**, where historic oil and gas exploration revealed potential brine-hosting basin sediments 250-600m below surface. The area demonstrates strong potential for Li brine and Li in clay deposits and has returned high-grade Li surface assays, with up to 2,200ppm Li and averaging 700ppm in 56 of 177 samples, above a 270ppm Li cut-off.

Work by other players in the district supports PAM's view of prospectivity. For example, TEM geophysics by CleanTech Lithium (AIM:CTL) identified extensive low resistivity zones, interpreted as subsurface hypersaline brine at 200-500m depth (open), in a 25km-wide area; CleanTech reported salt crust assays with up to 3,100ppm Li and clays up to 2,400ppm Li. The location of the TEM line (CX L45) is about halfway between PAM's Ramatidas and Powerline prospects.

Lithium Chile Inc. (TSXV:LITH) has been exploring the Salar de Llamara project, WSW of PAM's Ramatidas prospect, where it reported near surface brine assays up to 350mg/L Li. In March, 2024, Lithium Chile announced that it had entered into a farm-in arrangement with the French mining multinational, Eramet, which incorporated the Llamara project.

## Infrastructure

Aside from the favourable geological setting, strategic advantages of Tama Atacama include a relatively low altitude (800-1100m), hyper arid environment (for evaporation) and developed infrastructure. The national highway and energy grid run through/alongside project areas.

Tama Atacama is 40km from the coast; and 75km from the coastal city of Iquique (pop. 200k). Several pipelines pump sea water through PAM's project areas, providing a potential solution to achieving water balance. Road and rail are available to Antofagasta, South America's Li chemical manufacturing hub.

Large scale lithium chemical manufacturers SQM and Albemarle have announced and/or completed expansions in Chile. In PAM's view, this makes Tama Atacama one of the few lithium brine projects in the global peer group that is proximal to large-scale operating and planned lithium chemical production.

## Permitting and tenure

To move into production, PAM will require a Special Lithium Operation Contract ('Contratos Especiales de Operación de Litio' or 'CEOL') from the Chilean Government, which will permit exploration, extraction and processing of lithium.

The first step in obtaining a CEOL is a 'Request for Information' (RFI) process - PAM made the appropriate submissions for its holdings in JunQ24. Any concession area excluded from the RFI process can still be explored for other minerals, such as copper.

## Looking ahead

PAM's focus here is on the ongoing RFI process and obtaining CEOLs for its holdings. In anticipation, discussions with service providers for geophysics and drilling are underway.

## Lithium in Thailand

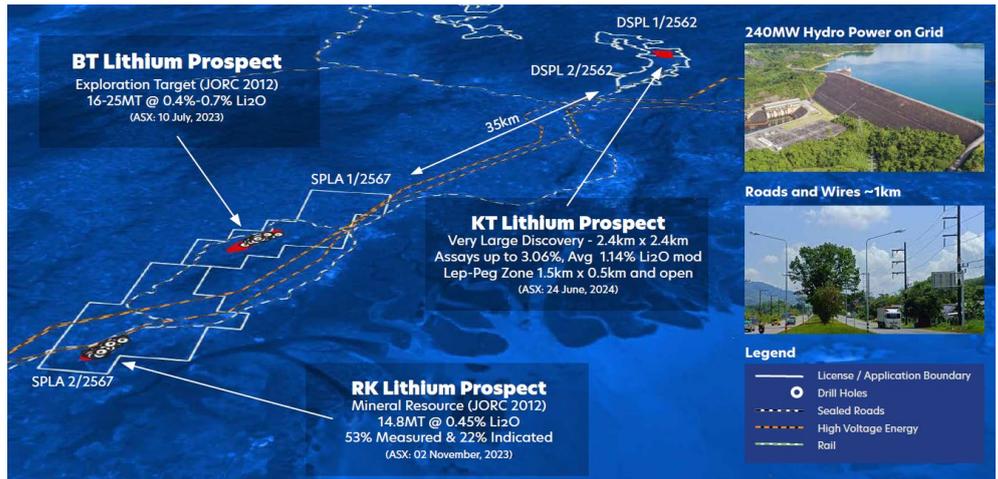
### The RK Project and its Prospects

RK is hard-rock (pegmatite) lithium project. Mineralisation is predominantly lepidolite.

The company’s lithium project in Thailand, the RK Project, is focused on a series of **felsic pegmatite dyke swarms** that are enriched in lithium, as well as rubidium, tin and other useful metals. **Lithium presents as the mineral lepidolite** which is a member of the mica family. RK is divided into three Prospects: RK (again), BT and KT East.

RK is proximal to infrastructure and renewable energy, such as the 240MW Rajjaprabha Hydro Power Station and Phet Kasem Road or Highway 4, one of Thailand’s four primary highways.

Figure 5: RK Project and its associated lithium prospects



Source: Company report

### RK Prospect

The RK Prospect has an open-pittable resource of 164.5kt LCE grading 0.45% Li<sub>2</sub>O. It also grades 0.2% Rb, which could prove to be a useful cost credit for Li production.

As far as we know, the **RK Prospect within the RK Project hosts the only JORC-qualifying lithium Resource in South and South-East Asia - namely 14.8Mt @ 0.45% Li<sub>2</sub>O**; see Figure 5. The resource extends from surface to at least 150m depth and is amenable to surface mining, as demonstrated by the presence of an old open-cut tin mine from the 1970s; this pit, which was mined by hydraulicking of weathered rock, measures 500m long, is up to 125m wide and reached 30m below surface. The prospective zone has >1km strike.

Figure 6: RK Prospect JORC Resource

Resource Category	Resource (Mt)	Li <sub>2</sub> O %	Sn ppm	Ta <sub>2</sub> O <sub>5</sub> ppm	Rb %	Cs ppm	Cont. LCE
Measured	7.8	0.44	410	74	0.2	230	85,289
Indicated	3.26	0.49	349	85	0.2	261	39,375
Inferred	3.74	0.41	390	78	0.19	229	38,252
<b>Total</b>	<b>14.8</b>	<b>0.45</b>	<b>391</b>	<b>77</b>	<b>0.2</b>	<b>237</b>	<b>164,500</b>

Note: Contained LCE for individual Resource categories is subject to tonnes and grade rounding.

Source: Company report

PFS work has returned some favourable metallurgical results.

**A Pre-Feasibility Study (PFS) of producing lithium carbonate and/or lithium hydroxide** was started, although it’s been deferred due to market conditions. **Test-work has been positive**: optical ore sorting increased grade from 0.5% to 0.92% Li<sub>2</sub>O, although this process required further refinement to reduce loss of Li<sub>2</sub>O, while sulphate roasting and water leaching achieved up to 88% Li extraction.

### BT Prospect

BT is located 8km north of RK Lithium Prospect and is similarly mineralised. It has an Exploration Target of 16-25Mt @0.4–0.7% Li<sub>2</sub>O (Drill Supported, JORC 2012). This mineralised trend is >1,500m in strike, up to 300m wide, and open to north and south with potential extensions. Among the most recent assays results, 44/64 samples averaged 1.56% Li<sub>2</sub>O. The resource will incorporate 47 drillholes, so far completed.

Conversion of the Exploration Target at BT to a resource is low-hanging fruit for PAM, which could boost the in-ground LCE inventory and help underpin the RK Project’s valuation.

KT East is a walk-up drill target of considerable scale.

PAM management have been very active in Thailand, negotiating MoUs with big chemical and EV players IRPC and VinES that would integrate PAM’s future lithium production into the regional battery material supply chain.

Figure 7: BT Prospect Exploration Target

Exploration Target	Target (Mt)	Li <sub>2</sub> O %	Sn %	Ta <sub>2</sub> O <sub>5</sub> ppm	Rb %	Cs (ppm)	K (%)
Lower	16	0.7	0.16	120	0.3	250	2.8
Upper	25	0.4	0.11	95	0.25	200	2.4

Source: Company report

### KT Prospect

This prospect covers five special prospecting license applications (SPLA) 30km to the north of the RK Lithium Project. Two blocks contain active geothermal fields. At KT East, a pegmatite field has been mapped over c2.1km x 1km, including a 1.5km x 500m main zone of lepidolite-pegmatite dykes that are commonly 1-10m wide, with some >20m wide. Rock chipping returned 138/181 at >0.25% Li<sub>2</sub>O, averaging 1.04% Li<sub>2</sub>O. The rock-soil geochemical footprint here is greater than RK and BT combined. PAM considers this to be a high-priority walk-up drill target.

### Project strategy

Thailand is a major vehicle production hub: PAM aims to contribute lithium chemicals to the supply chain of a potential in-country EV industry, assisted by collaborations with Thai chemical giant IRPC and Vietnamese battery producer VinES.

Figure 8: MoUs with IRPC and VinES

<p><b>THAILAND</b></p> <p><b>PAM - IRPC MOU</b>                  RK Concentrate to CAM initiative                  PAM is the only emerging vertically integrated LCE producer in the region                  PFS scheduled for 2023/2024                  Mining License Applications scheduled for 2023/2024</p> 	<p><b>VIETNAM</b></p> <p><b>PAM - VinES MOU</b>                  Lithium Conversion Facility                  Working with the largest battery producer in Vietnam                  Pre-feasibility study near completion                  Exposes PAM to mid stream lithium supply chain                  Positions PAM for potential nearer-term cash flow</p> 
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Source: Company report

It's clear that Thailand is supportive of PAM's efforts to start lithium production at RK.

The MOU with IRPC considers mining and production of a lithium mineral concentrate by PAM, followed by processing into lithium chemicals (LCE). It is noteworthy that IRPC parent PTT has JVs with CATL, Gotion, Foxconn, producing EVs and LIBs.

Separately, the MoU with VinES (a subsidiary of EV maker VinFast) is to build a standalone 25ktpa lithium conversion facility in Vietnam, initially based on 3rd party SC6 concentrates as feedstock, and producing lithium carbonate. This project has a PFS nearing completion and conversations have commenced with potential offtake partners (including, for example, IRPC).

PAM's management have deep business connections in Thailand. There are numerous signs, such as expedited licencing processes, and being granted formal access to decision-makers, that the Thai Government strongly supports PAM in its efforts to help develop a domestic lithium mining and processing industry in the country.

## Looking ahead

Difficult lithium market conditions slowed progress at RK as they have at Tam Atacama. However, work around the MoUs is very much ongoing.

The next steps in Thailand are likely to be conversion of the BT Exploration Target to a JORC Resource, and initial drilling at KT East, subject to funding.

## Copper in Chile

### The new Rosario Copper Project

Rosario is a very promising new acquisition by PAM in Chile, as a first step in diversifying its asset portfolio beyond lithium.

PAM has recently acquired an option to earn 100% of Rosario, which is a "manto" style copper-silver project located in Chile's Central Copper Belt, one of the world's premier copper mining regions.

Manto orebodies (from the Spanish word for mantle or cloak) are polymetallic carbonate-replacement deposits, similar to skarns, which may be associated with or distal to felsic porphyry/igneous systems. They are a key source of copper production in Chile.

Acquisition terms include a three-year option period, with a US\$100k annual fee payable in 50/50 cash and shares; PAM can choose to acquire 100% of the project at any time, under the same 50/50 terms.

The Rosario Project, which has seen historic mining on a small scale, is 10km north of the well-known El Salvador copper mine that has been operating since 1959. Enami's Oxide and Sulphide processing plant, and Codelco's Porterillos Copper Smelter, are located nearby (c.100km and 50km respectively). The area is 40km from the nearest airport and 130km from the port at Chanaral.

Three prospective trends, associated with fractured and brecciated rocks, have been identified with a combined strike length of ~15km; mineralised zones are interpreted up to 200m in width. There has been no drilling yet. Rock chip sampling has been encouraging, with 73/89 grading >0.1% Cu and averaging 2.13% Cu and 6g/t Ag; of those, 43/73 (>58%) are >1.5% Cu and average 3.0% Cu and 9g/t Ag; individual samples grade >5% Cu.

Drilling is expected to start in October.

There are multiple walk-up drill targets, which will be refined by IP (Induced Polarisation) geophysics from early September, ahead of drilling in October. The project will be PAM's focus, certainly for the first half of FY25. We anticipate 10-12km/yr of drilling, predominately RC but with some DC (diamond) for structural information, which will generate frequent and ongoing newsflow.

Figure 9: Location of Rosario relative to El Salvador Cu/Mo mine

Manto deposits are known for their medium to high copper grades of c.1-3%, accompanied by silver grades of up to 40g/t. Chilean examples include Mantos Blancos (220Mt @ 1.2% Cu) and Lo Aguirre (11Mt @ 2.24% Cu).

Surface samples at Rosario are of this tenor in terms of grade, but the project requires drilling to understand the resource potential.

Rosario is well situated in terms of infrastructure, including plants that will treat third-party copper ore.

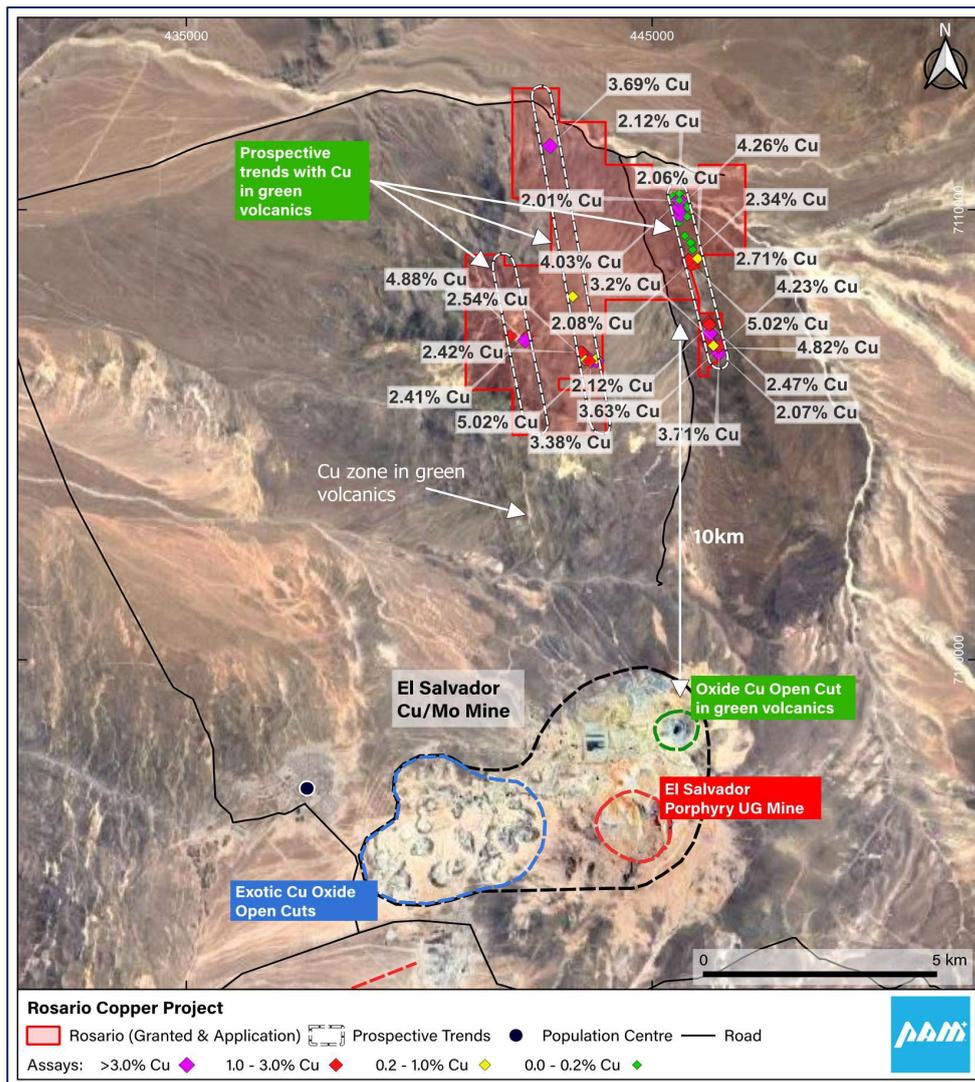
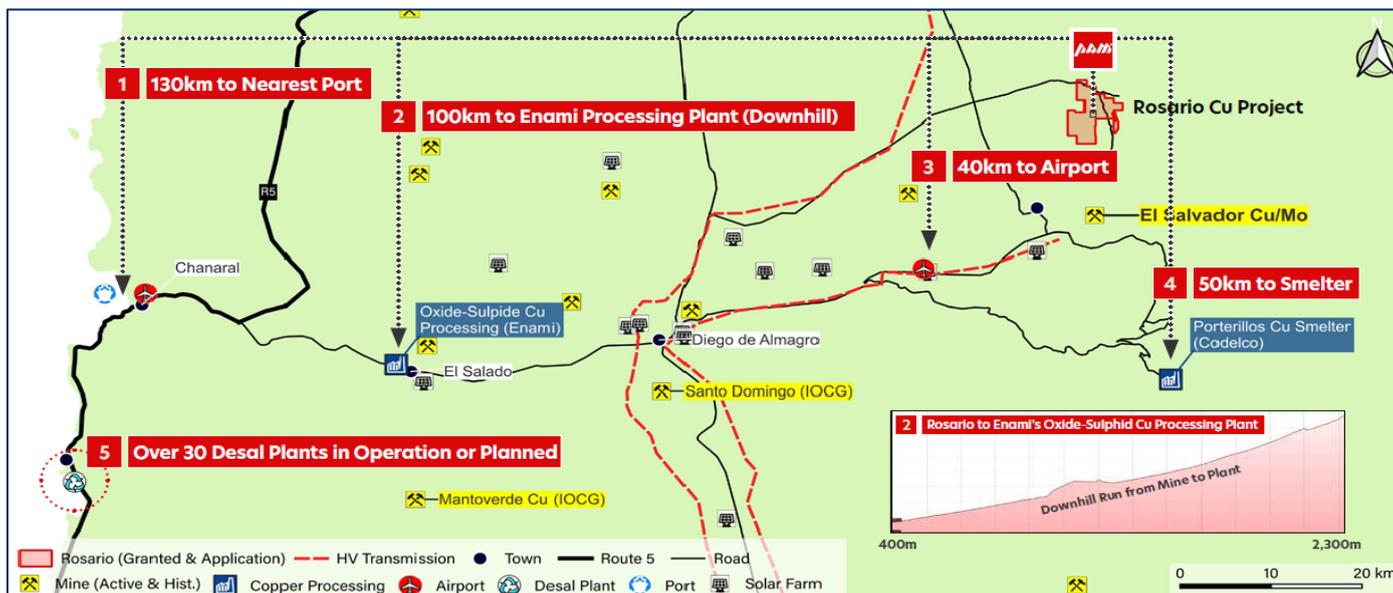


Figure 10: Location and infrastructure advantages of the Rosario Project



Source: Company report

## Corporate

PAM has a very experienced Board, with considerable commercial and technical expertise.

The Executive Chairman and MD, Paul Lock, owns 24.5% of the company.

PAM recently raise A\$761k in equity at 7.2cps. Two of the directors, Paul Lock and David Hobby, have agreed to take \$250k (or \$125k each).

### Directors

**Overseeing the Board is Executive Chairman, Managing Director and major shareholder Paul Lock.** Paul, who has focused on the mineral resources sector in South-East Asia since 2012, has a background in corporate advisory, project finance and commodities trading (Marubeni, Rothschild). His academic qualifications include four Masters degrees, in politics, business and law.

**David Hobby is Technical Director and Chief Geologist.** David is an economic geologist with +30yrs of field experience, across multiple countries, deposit types and stages of project development.

**David Docherty is a Non-Executive Director.** David has been involved with the resources sector since 1965, holding senior executive and exploration roles including Executive Chairman of Thai Goldfields NL (since 2002).

**Thanasak Chanyapoon is also a Non-Executive Director.** Thanasak is a lawyer and company executive with strong connections to the Thai business community.

### Shareholders

**Substantial:** Paul Lock, 24.5%, Sydney Equities 9.5%, Citicorp Nominees, 8.5%.

### Capital structure and cash

After this week's capital raising of \$761k @ 7.2cps, shares on issue are c.196.1m. Options are 5.28m after a 1:2 issue in the raise.

**Cash at 30-Jun-24 was US\$486k** (PAM reports in US\$) and we estimate there has been minimal spending since then, so after raising \$761k, **PAM should have c.A\$1.5m in the bank**, enough to fund initial geophysical surveys and RC drilling at Rosario.

The company has **convertible notes** on issue to the tune of A\$986k, with terms 16% pa, conversion @ 15cps, for 12mths from Mar'24.

It's certain that PAM will need to raise further capital to drill and define resources in FY25.

## Risks of investment

PAM's activities are subject to the usual **operational, financing and jurisdictional risks** of mineral exploration in a developing country. On the downside, these may or may not include – and are not limited to – difficult or remote terrain, inconvenient weather, problems with land access, local anti-mining sentiment, problems in sourcing staff and equipment, slow assay turnaround, funding challenges, political and social unrest, and the possibilities that future permits may not be granted.

PAM is at the stage of feasibility studies in Thailand, and early- to mid-stage (pre-resource) exploration in Chile. There are risks associated with **resource and reserve definition** and the potential findings of ongoing **scientific and economic studies**.

All mineral projects are exposed to **commodity price and exchange rate variations and the state of the global financial markets**, which can affect project valuations, liquidity and the ability **fund** development and working capital.

# Appendix 1 – Asset valuations

## Summary

PAM is valued using SOTP for individual projects, adjusted for corporate costs and net cash.

Based on lepidolite resources at RK, PAM is being valued at A\$111/kg LCE, below the peer average of A\$138/kg ...

... including some fair value for the Exploration Target, this drops to A\$79/kg LCE.

We value RK at A\$0.17/sh with upside to A\$0.21/sh.

In this chart, PAM (blue) is the LCE value for the RK resource and PAM+ (yellow) includes value for the BT exploration target.

We are valuing PAM’s mineral assets based on **industry peer EV/resource ratios (\$/kg/LCE, Lithium Carbonate Equivalent) for RK Lithium; a comparable transaction in \$/ha for Tama Atacama Lithium, and the cost method (expected two-year exploration spend) for Rosario Copper.** These valuations then form part of an overall Sum of The Parts (SOTP) valuation for PAM, adjusted for corporate costs and net cash in the usual way. **The full valuation table is shown in Figure 3, near the front of the note.**

## RK Lithium Project (lepidolite pegmatite, Thailand)

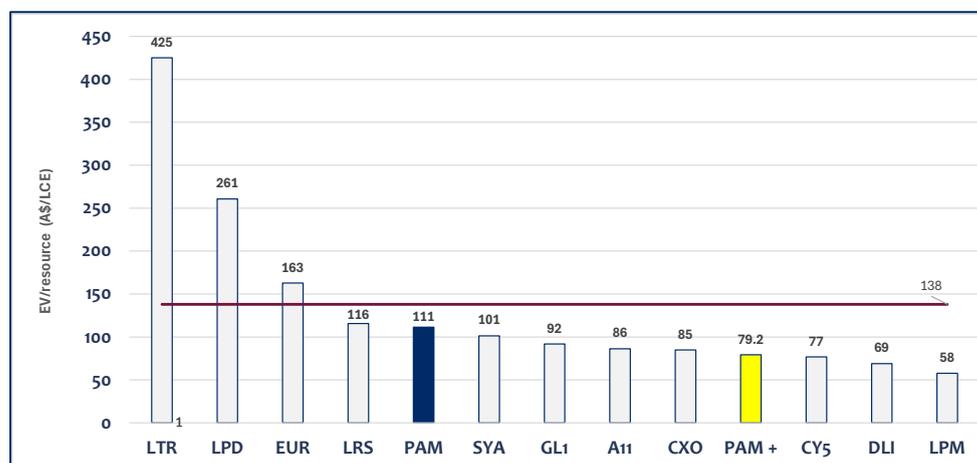
On an EV/Resource basis, with an EV of A\$18m and applying the 164.5kt LCE Resource at the RK Lithium Prospect, PAM is being valued at **A\$111/kg LCE**. This is **below the industry peer average of A\$138/kg** for ASX lithium industry peers with resource-stage through to early production-stage projects. At the current lithium carbonate price of US\$9,262/t (ex-Chinese VAT) and AUDUSD rate of 0.67, **these ratios are equivalent to 0.81% and 1%, respectively, of the in-ground of LCE.**

If we include the mid-range of **PAM’s lithium Exploration Target at the BT Lithium Prospect**, of c.257kt LCE, with a 25% weighting to allow for pre-resource risk, **the ratio falls to A\$79/kg LCE**. We’ve lifted this weighting to 50% as part of our Upside valuation case.

The picture isn’t simple, as most ASX companies with resources are focused on spodumene, which is the most Li-rich of the common lithium ore minerals and has been targeted by explorers in WA and Canada. **PAM’s hard rock deposits are lepidolite**, which is the focus of fewer explorers, so it has fewer direct peers. There is certainly a market for lepidolite concentrates in China, and lepidolite occupies an increasingly favourable position on the industry cost curve (see Figure 14 in Appendix 2).

In our view, as the lithium market recovers in 2025 and as the RK Project advances through feasibility studies, permitting and partnerships, the lepidolite assets should be rated at the average market multiple, of 1% in-ground value, which is **A\$0.17/sh**, with an Upside valuation of **A\$0.21/sh**.

**Figure 11: EV/resource comps for lithium equities**



Source: MakCorp, GBA Capital, IRESS

Based on a comparable asset-based transaction, and applying a very conservative 5% weighting to the implied A\$/hectare value for PAM's lithium brine exploration projects, Tama Atacama is valued at A\$0.08/sh, with upside to \$0.16/sh.

## Tama Atacama Lithium (brine, Chile)

PAM's salar-hosted brine assets in Chile may be better understood by ASX investors than the hard-rock lepidolite, given the success of companies focused on brines in South America – e.g. the former Orocobre (now part of Arcadium Lithium). **There is a ready and more specific comparable available for the brines, namely Eramet's 2023 purchase of Siete Salares in Chile for US\$95m**, in units of A\$/hectare of lithium-prospective salar. In round numbers, Eramet paid an impressive US\$2375/ha for the salars at Siete Salares.

At first glance, this implies a valuation of +US\$200m for Tama Atacama based on area alone; however, the comp isn't a straight look-through, because **Tama is a less-advanced project than Siete Salares**, with only surface sampling (albeit encouraging) to date, rather than brine sampling.

To reflect this earlier stage of development we've applied a conservative 5% weighting, which, on conversion to A\$ at AUDUSD 0.67, gives us A\$15.1m or A\$0.08/sh. For our Upside valuation we've used a 10% weighting or A\$0.16/sh, which could be achievable as the project progresses towards drilling and further studies.

Figure 12: Comparable transaction to value Tama Atacama in A\$/ha

Company	Eramet (EPA:ERA)	Pan Asia Metals (ASX:PAM)
Project	Siete Salares	Tama Atacama
Agreement date	Nov'23	
Project area, total (ha)	120,000	99,600
Area, salars (approx. hectares, ha)	40,000	85,000
Estimate grade, mg/L (brine) or ppm (surface)	1000 (brine)	2200 (surface)
Transaction price (US\$)	95,000,000	
Implied price, salars (US\$/ha)	2375	
Implied valuation, salars (US\$)		201,875,000
<b>Risked valuation (A\$, 5% weighting, AUD:USD 0.67)</b>		<b>15,065,299</b>
<b>Risked Valuation (A\$/sh)</b>		<b>0.08</b>
Shares		192,462,744

Source: Company reports, GBA Capital

The early-stage Rosario is valued on the expected two-year exploration cost, of A\$0.05/sh.

## Rosario Copper (Manto-style, Chile)

The most challenging of mineral asset valuations is that of early-stage exploration projects that are pre-resource or, in the case of Rosario, pre-drilling. **A reasonable method to use is cost**, being either the acquisition cost of the project, or the planned exploration spend over the medium term, or both; as, **if exploration is successful, these costs are likely to be capitalised and become part of the carrying value of the asset.**

In the case of Rosario, we've assumed an exploration spend over two years of A\$9m, based on drilling 10km/yr at an all-in cost of US\$300/m (including other exploration work and assays) with an AUDUSD rate of 0.67. **This equates to A\$0.05/sh.**

## Appendix 2 – Commodity outlook

### Copper

Copper prices increased in 1H2024. The factors supporting copper are traditionally the opposite of those supporting gold – except in terms of interest rates, where they’re more closely aligned – so we’ve repeated a couple of points from the previous section.

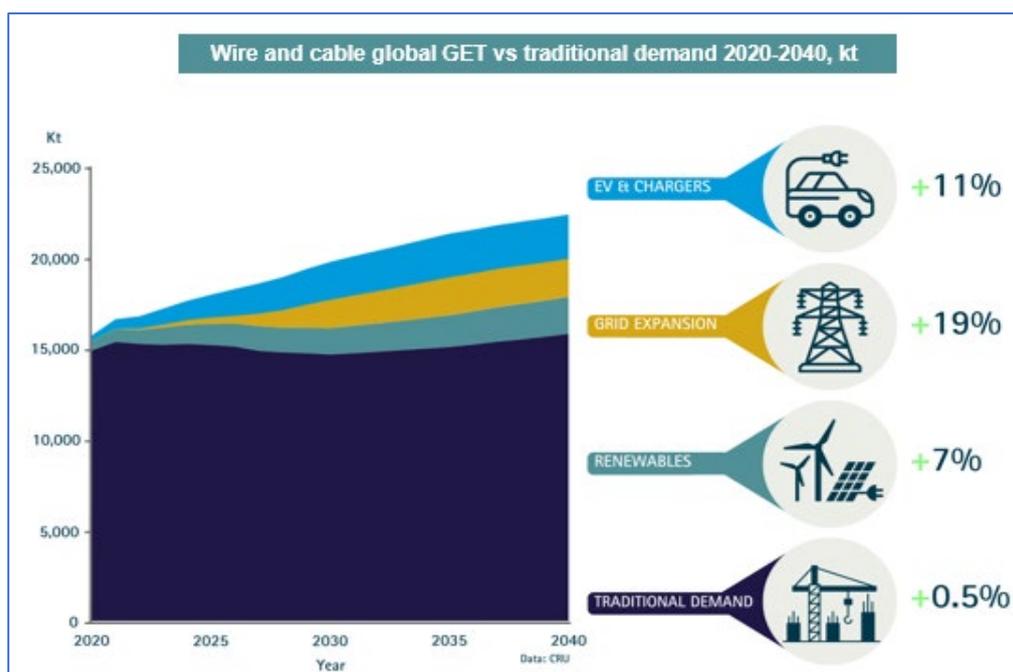
### Outlook for 2024/25

There are still reasons to be cautious about the near-term trajectory for copper prices, but the outlook is certainly improving.

- Copper prices lifted from 2023 and into 2024 on expectations that interest rates might fall, stimulating growth, although the run has slowed due to uncertainty about the timing of rate cuts by the Fed Reserve and other central banks. The current price is US\$4.15/lb (A\$6.16/lb) or US\$9149/t, up c.10% YoY.
- Global recession, or a recession in certain economies, is still a possibility if central banks mistime the easing of interest rates, which were set higher to combat inflation – economic trouble is negative for copper.
- Heightened geopolitical tensions (especially in a key election year for major economies) remain a headwind for copper; although, sadly, the outbreak of conflicts is often positive for industrial metal demand.
- Looking forward, copper demand is expected to grow from copper demand from the 28.3Mt we saw in 2020, up to to 40.9Mt in 2040, which is a 1.85% compound annual growth rate (CAGR). The key driver of this is electrification and in particular grid expansion, as expressed by demand for copper wires and cables.
- In line with market consensus, we expect copper prices to reapproach their record intraday high of US\$5.20/lb Cu (US\$11,460/t) in 2025 after consolidating in 2H24.

It is difficult not to be bullish about the long-term outlook for copper, given consistent demand and increasingly problematic supply.

Figure 13: Key drivers of demand for copper wire and cable



## Lithium

The lithium carbonate price is currently US\$9262/t (ex-Chinese VAT), which is c.66% lower year-on-year and the lowest price in more than three years, amid concerns of oversupply. However, market consensus view is that prices are bottoming and should stabilise in 2025.

### Factors affecting the lithium price

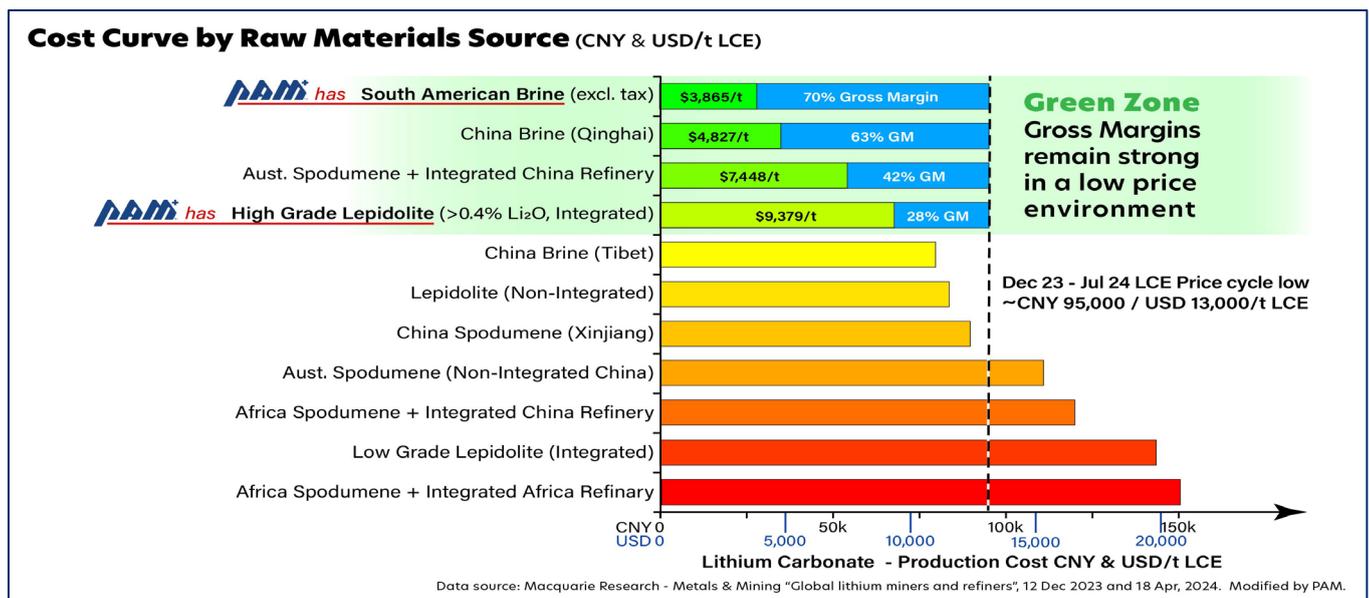
(Sources: Trading Economics, GBA Capital)

- Lithium miners and producers continued to expand capacity and hunt for new reserves, even though global supply was expected to soar. This magnified the supply surplus amid a battery glut due to government subsidies for firms across the supply chain.
- Hopes of eventual balance in the market drove Chile to signal it would aim to double output over the next decade, and the race to secure battery metals drove China to expand projects in Africa.
- Adding to the bearish pressure, the EU placed a 9% tariff on Tesla EVs produced in China, adding to trade barriers against China-based EV manufacturers. Also, the US quadrupled duties on Chinese EVs, pushing against battery materials.

The lithium market is in the doldrums because of over-enthusiastic increases in supply that were a response to previous record prices.

The EV-driven market, which is still relatively new and unstable, is likely to find equilibrium in 2025.

Figure 14: Lithium cost curve, showing advantages for brines and lepidolite



Source: Company report after Macquarie Research

### Cost-curve advantages

PAM's most advanced lithium project is KT in Thailand, which hosts lepidolite mineralisation. Lepidolite is a member of the mica mineral family. It has a lithium content of 7.7% Li<sub>2</sub>O, slightly lower than the more widely known ore mineral, spodumene (a pyroxene), which has 8.03%. Lepidolite's physical properties and composition can make it more challenging to treat; however, there is a market for lepidolite mineral concentrates in China; also, in many cases, processing can be lower cost than spodumene. PAM also has earlier-stage brine-hosted projects in Chile; it's well understood that brine operations if successful can sit in the lowest part of the cost curve.

## Recommendation structure

**Buy:** Expected to outperform the overall market on a 12 month view.

**Hold:** Expected to perform in line with the overall market on a 12 month view.

**Sell:** Expected to underperform the market on a 12 month view.

**Not Rated:** GBA has a factual view of the company with no recommendation.

**High Risk:** A qualitative rating, based on our assessment of significantly higher-than market risk of share price volatility.

**Medium Risk:** A qualitative rating, based on our assessment of market-average risk of share price volatility.

**Low Risk:** A qualitative rating, based on our assessment of lower-than-market risk of share price volatility.

**If no Recommendation is stated, including 'Not Rated', then the note has been commissioned for publication by the subject company. A Valuation may be provided, but not a Price Target.**

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