

# Plateau Energy Metals Inc.

{PLU-V}

SECTOR: Mining

STOCK PRICE \$0.66  
RATING **BUY**  
TARGET PRICE \$3.00  
RISK Very High

## RESOURCE UPDATE

# Falchani Metallurgical Study Results Solid ahead of PEA

**OUR TAKE:** Metallurgical results of Phase II testing for Plateau's 100%-owned Falchani lithium project were better than our expectations and better than the assumptions used in our mining concept and should support mid-tier OPEX in the upcoming PEA, competitive with the range of current global production. Today's results support our thesis for the potential of Falchani to become a commercially viable, cost-competitive, large scale lithium mine. The main focus for investors over the next 2 weeks should be the resolution of mining claims ahead of our first look at preliminary economics for Falchani.

### KEY HIGHLIGHTS

- ◆ **Two leading front-end process options.** Two competing processing routes have emerged as preferred processes for the front-end of the plant, **1) tank leach at 95°C, 2) sulphation baking at 200°C**; with both followed by the same conventional process to lithium carbonate (LC) product. (Figure 1). Both processes have been **shown to produce a high-quality LC product of >99.74% purity (exceeding battery-grade)**, with certain trade-offs on items such as acid consumption, consistency of recovery and final product composition. Both approaches produce a high-quality lithium carbonate battery-grade product that **compares well with the composition of other commercial battery-grade product (Figure 2)**.
- ◆ **High end-to-end lithium recovery through the system.** Both processes recorded high overall lithium recovery. The heated tank leach option yielded 89% Li to solution, coupled with 90% Li yield through final processing for **77-81% all-in process recovery to LC product** at 370kg/t ore acid addition. Overall recovery to LC of up to 89% was achieved at higher sulphuric acid addition (470kg/t). Sulphation baking produced a wider range of end-to-end Li recovery to product of 72-82% at a net addition rate of 330kg acid/t ore. Sulphation baking generally produced a nominally cleaner battery-grade lithium carbonate product, notably better at reducing aluminum, calcium and potassium (Figure 2). That said, both process routes produced a high purity end-product and the heated tank leach option will be the base-case for the imminent PEA, although we should see additional detail regarding the trade-off study between both processes in that study as well.
- ◆ **A note on acid costs.** With today's results we can infer certain costs ahead of the PEA. Discussions with PLU suggest that a sulphuric acid cost of US\$100/tonne is market in Peru (before transportation). It is likely PLU will consider an on-site sulphuric acid plant which would carry a significant upfront investment but would reduce the acid and transport costs. For the following we have used the commercial price of US\$100/tonne. Under the tank leach option 370kg acid addition per tonne of ore processed implies an acid cost of US\$37/t ore. At an average resource grade of 2,774 ppm Li or 1.46% LCE, and 80% end-to-end recovery, Falchani would produce ~11.7kg lithium carbonate/tonne of ore. In this case it would produce 1 tonne of LC product per 85.5 tonnes of ore **suggesting an acid cost per tonne of LC product in the range of US\$3,170**. Acid costs are typically the highest single OPEX item in a plant such as this, likely accounting for ~65% of total OPEX. **If this high-level proxy for costs holds up in the PEA, we can expect to see OPEX in the range of US\$5,500/tonne of lithium carbonate**, providing very compelling margin vs current market prices.
- ◆ **Metallurgical results better than our conservative assumptions.** Under the heated tank leach scenario forming the basis for our mining concept, we modelled 90% recovery to solution (vs 89% in today's results) coupled with 70% yield to product (vs 90%) for end-to-end recovery of 63%. This is much more conservative than the end-to-end recovery reported today (77-81%) and should drive a stronger economic profile than our concept.

### RECOMMENDED ACTION

**We recommend accumulating PLU shares ahead of big de-risking metallurgical work and PEA**

- ◆ **Recommend accumulation ahead of PEA.** We believe the market will lift the discount on PLU with clarity on title issues for certain claims and with the PEA outlining potential costs for the large deposit. PLU is now trading at an in-situ resource value of US\$19/t Li<sub>2</sub>O (US\$7/t LCE), reflecting a steep discount to more advanced peers. With a PEA providing more cost clarity, PLU should see a re-rating.

#### KEY STATISTICS AND METRICS

52-Week High/Low	\$1.65/\$0.46
YTD Performance	-4.3%
Dividend Yield	n/a
Shares O/S	79.5M (basic)
Market Capitalization	\$67M
Cash	\$2M
Total Debt	Nil
Enterprise Value	\$65M
Daily Volume (3 mos.)	26,784
Currency	C\$ unless noted

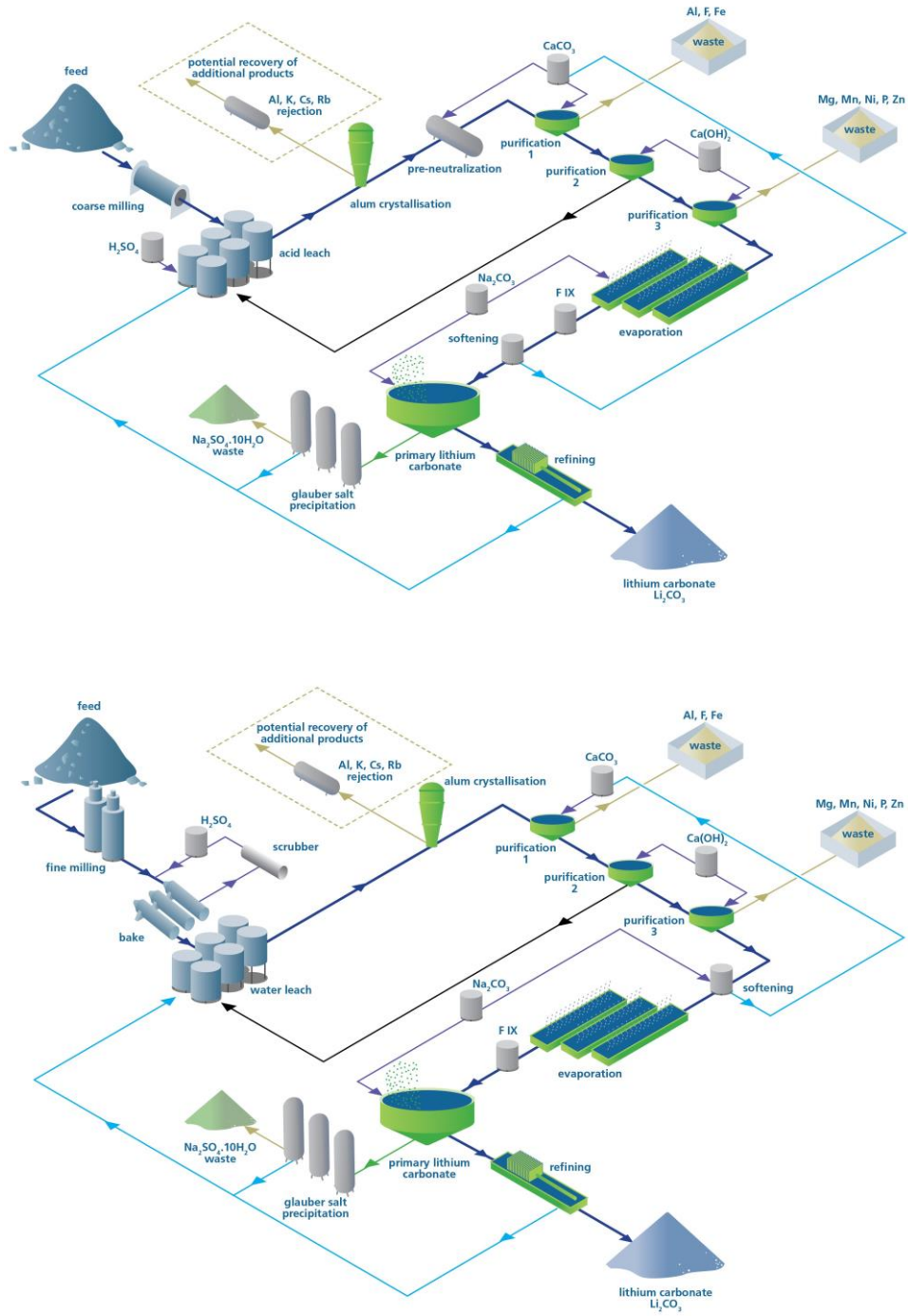
#### HAYWOOD ESTIMATES

	2019E	2020E	2021E
Lithium Price (US\$/t)	15,597	15,597	15,597
Lithium Resource (T)	157M	157M	157M
Free cash flow (\$M)	(2.2)	(31)	(31)

#### VALUATION

Our target is based on a sum-of-the-parts valuation incorporating an **in-situ NAV for Falchani at a US\$84/t Li<sub>2</sub>O multiple** and an **NPV<sub>20%</sub> on the Macusani Uranium Project**.

Figure 1 – Falchani Process Flow Diagrams (Top: Tank Leach; Bottom: Sulphation Bake)



Source: Plateau Energy Metals Inc.



Figure 2 – Battery-Grade Lithium Carbonate Composition from Falchani Met Study vs Livent Product

Process Option	Tank Leaching	Bake/Volatilisation	Livent Battery Grade
LC Purity (%)	99.74	99.82	99.5
Element	ppm	ppm	ppm
Al	9.9	<b>2.5</b>	10
As	<b>2.5</b>	<b>2.5</b>	
B	17	2.5	
Ca	293	31	400
Cr	<b>2.5</b>	<b>2.5</b>	
Cs	<b>2.5</b>	<b>0.3</b>	
Cu	<b>2.5</b>	<b>2.5</b>	5
Fe	<b>2.5</b>	4.0	5
K	248	81	
Mg	<b>2.5</b>	<b>2.5</b>	
Mn	<b>2.5</b>	<b>2.5</b>	
Mo	<b>2.5</b>	<b>2.5</b>	
Na	467	594	500
Ni	<b>2.5</b>	<b>2.5</b>	6
P	16	29	
Pb	<b>2.5</b>	<b>2.5</b>	
Rb	3.0	<b>0.3</b>	
S	429	215	
SO <sub>4</sub>	1285	645	1000
Si	25	<b>13</b>	
Sr	4.3	<b>2.5</b>	
U	<b>2.5</b>	<b>0.3</b>	
Zn	<b>5</b>	<b>2.5</b>	5
F	6.2	7.5	

Bolded figures are less than values; ppm = mg/kg. Source: ANSTO

Source: Plateau Energy Metals Inc.



Figure 3 – PLU Stock Chart (Daily)



Source: Stockcharts.com, Haywood Securities Inc.



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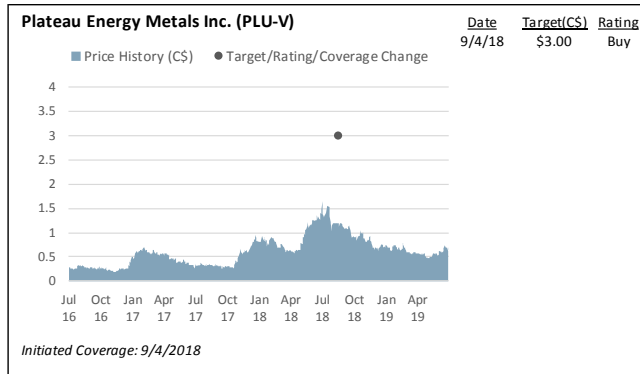
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### Distribution of Ratings (as of July 18, 2019)

	%	#	IB Clients (TTM)
<b>Buy</b>	80.4%	86	100.0%
<b>Hold</b>	5.6%	6	0.0%
<b>Sell</b>	1.9%	2	0.0%
<b>Tender</b>	1.9%	2	0.0%
<b>UR (Buy)</b>	0.0%	0	0.0%
<b>UR (Hold)</b>	0.0%	0	0.0%
<b>UR (Sell)</b>	0.0%	0	0.0%
<b>Dropped (TTM)</b>	10.3%	11	0.0%



Price Chart, Rating and Target Price History (as of July 18, 2019)



B: Buy; H: Hold; S: Sell; T: Tender; UR: Under Review  
 Source: Capital IQ and Haywood Securities

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