

# Phoenix Copper Ltd (PXC AIM)

01 August 2019

**Stock Data**

Share Price:	15.50p
Market Cap (M):	£6.6
EV (M):	£6.6

**Price Chart**

**52 Week Range**

36.00p	15.50p	13.50p
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**Company Summary**

Phoenix Global Mining is aiming to restart the Empire Copper Mine as a heap leach SX/EW mine in Idaho, USA. Following a successful restart, funds will be directed to exploration to extend mine life and develop a sulphide mine.

MAIN SHAREHOLDERS	HOLDING
Cheviot Capital	15.70%
JIM Nominees Ltd	12.03%
Board and Management	10.12%
Lynchwood Nominees Ltd	6.36%

Source: Bloomberg & Phoenix Global Mining

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## Phoenix Announces Completion of New Empire Mine Economic Model

### Event

Phoenix Coper Ltd ("Phoenix") has announced that it has completed a new economic model for the Empire Mine open pit heap leach SX-EW project in Idaho, USA.

### Highlights

The key points relating to this update are:

- The revised economic model is based on the updated NI 43-101 compliant resource from May 2019.
- The mine will treat 1.6M tons of ore per year for a 9 year mine life producing 7,000 tons of copper and 1,600 tons of zinc per year.
- There will be an additional 2 years mine life processing low grade ore yielding a further 6.6kt of copper and 2.28kt of zinc pa.
- Initial capital expenditure is US\$50.6M
- Using a US\$2.75/lb copper price and a 7% discount rate the NPV is US\$25.5M with an IRR of 20%.

### Comment

In deriving this valuation, Phoenix have reverted to using short tons which makes comparatives with previous releases somewhat awkward. The net present value ("NPV") is quoted after tax, but is unfunded. It is also based on the co-production of 1,600 tons of zinc per year. The valuation is based on 100% ownership of the property, whereas Phoenix currently own 80%.

The valuations are very sensitive to the copper price with NPV's ranging from US\$25.5M at US\$2.75/lb rising to US\$85.4M at US\$3.75/lb for the life of mine. Phoenix are using a zinc price of US\$1.35/lb.

The price of copper used in this new economic model has dropped to US\$3.25/lb from the US\$3.75 used in the April 2018 PEA. This has had a significant impact on mine planning, resulting in a drop in the strip ratio from 2.7 to 2.0 and raised the head grade.

The weighted average cash cost of copper production is US\$1.89/lb, which is excellent for a small scale producer. Even better, in the first 2 years of operations, the cash cost averages a very respectable US\$1.49/lb.

The reason for the drop in the pre-production capex from \$68M to \$50.6M is three fold:

- it is a smaller plant producing 7kpy rather than 7.9ktpy and leaching 4ktpd down from the original 6.2ktpd
- the head grade has increased from 0.52% copper to 0.6% copper
- Substantial use has been made of second hand equipment

The use of a smaller plant has also stretched the total mine life out from 9 to 11 years, albeit the last 2 years processes low grade ore. The revised parameters used in the model, primarily brought about by the reduced copper price has had a significant impact on the valuation. Originally, the base case NPV in 2018 was \$43.1M with a 20.6% IRR whereas it now has an NPV of \$55.5M and an IPP of 33% with a \$0.50/lb lower copper price.

The new model did not include the recovery of gold or silver in the evaluation. This is because the current flowsheet does not allow for the recovery of precious metals. However, they could be recovered after the copper and zinc which would prolong the mine life and further boost the NPV. The calculations assume construction in 2021 with production from 2022 onwards. This seems realistic, especially given that the proposed site for the plant is beside the main road on the valley floor and not up the mountain near the mine.

Finally, we note this is a modest "starter" mine that should be able to finance the exploration budgets required to fully explore the Empire district and extended mine life. We firmly believe that getting to first cash flow is imperative for junior companies given the lack of exploration funding available.

This is a very positive outcome for Phoenix, with a relatively short construction time. We also note that at a copper price of US\$2.75/lb, the NPV is still a very creditable US\$25.5M with an IRR of 20%.

## Updated Economic Model Parameters

### Empire Mine Cash Flow Summary

<b>PRODUCTION</b>		
0.325% Cu cut-off	tons	12,794,000
	% copper	0.60
	% zinc	0.21
0.20 % to 0.325% Cu cut-off	tons	5,181,000
	% copper	0.27
	% zinc	0.14
<b>Total ore</b>	<b>tons</b>	<b>17,975,000</b>
Total Tons ore & waste	tons	53,235,000
Copper Recovery	%	76
Zinc Recovery	%	50
Scheduled Ore Production	per day	4,000
Scheduled Ore Production	per year	1,600,000
Mine life	years	11
Average annual copper production years 1-9	tons	7,000
Average annual zinc production years 1-9	tons	1,600
Plus leaching low grade stockpile	years	9 to 11
<b>REVENUE</b>		
LOM average Cu price	\$/lb	3.25
LOM average Zn price	\$/lb	1.35
<b>OPERATING COSTS</b>		
LOM ave operating cost	\$/ton ore	14.69
LOM ave operating cost	\$/lb Cu Equ	1.72
<b>CAPITAL COSTS</b>		
Pre production capital costs	\$	50,578,000
LOM Sustaining capital costs	\$	25,306,000
<b>PROFIT AFTER TAX</b>		
Ave annual after tax profit in years 1 to 5	\$	21,940,000
Ave annual after tax profit in years 6 to 11	\$	11,273,000
<b>RESULTS</b>		
Cu \$/lb	NPV (7%) US\$	IRR %
3.75	85,444,479	45%
3.50	70,450,899	40%
<b>3.25</b>	<b>55,457,319</b>	<b>33%</b>
3.00	40,463,738	27%
2.75	25,470,158	20%

## Research Disclosures

### **Peter Rose**

Peter has 33 years' experience in equities as a resources analyst; he has been at Brandon Hill Capital for 12 years, after having spent 11 years with Deutsche Bank in Australia. Prior to this he spent 2 years with Prudential Bache and 6 years with James Capel. Peter's industry experience includes 16 years as a metallurgist, 3 years with De Beers in South Africa and 9 years in the uranium industry, six of which were spent at the Ranger Uranium mine. Peter holds a BSc degree in Applied Mineral Science from Leeds University UK and a Bachelor of Commerce from the University of South Africa. Peter is also a member of the Institute of Materials, Mining & Metallurgy and a chartered engineer.

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Research disclosure as of 01 August 2019

<u>Company Name</u>	<u>Disclosure</u>
Phoenix Copper Limited (PXC AIM)	1, 2, 7, 8, 9

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