

Phoenix Copper Limited / Ticker: PXC / Sector: Mining

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**Phoenix Copper Limited  
 ("Phoenix" or the "Company")**

**Empire Mine Open Pit updated economic model delivers \$105\* million pre-tax 7.5% NPV**

Phoenix Copper Ltd (AIM: PXC, OTCQX: PXCLF), the AIM quoted North American focused base and precious metals emerging producer and exploration company, is pleased to announce that it has completed a new economic model for the Empire Mine open pit project in Idaho, USA to recover copper, zinc, gold and silver.

**Highlights**

- **Copper led US mining operation with production targeted for 2022**
- **The updated Economic Model ("EM") for the Empire Mine open pit project indicates strong cashflow and rapid payback in less than two years**
- **10-year Life of Mine ("LOM") processing a total of 14.3 million tonnes Measured & Indicated ("M&I") ore at a 0.5% copper cut-off grade**
- **Considerable opportunity to extend the LOM through exploration and development funded from project cashflows**
- **Two phased processing to recover copper, zinc, gold and silver**
  - o **Phase 1 heap leach project, a seven-year operation processing 2.1 million tonnes per year, producing copper and zinc from years one to seven of the LOM**
  - o **Phase 2 agitation leach project, a seven-year operation processing ore from Phase 1, producing gold and silver from years four to 10 of the LOM, using environmentally friendly ammonium thiosulphate ("ATS") processing reagent**
- **LOM revenue of \$784 million, producing average annual production of 8,550 tonnes of copper, 1,970 tonnes of zinc, 17,235 ounces of gold and 680,050 ounces of silver**
- **Initial head grade of 0.70% copper**
- **Pre-production capital cost of \$52.6 million**
- **LOM copper equivalent cash operating cost of \$1.83 / lb**
- **LOM gold equivalent cash operating cost of \$1,190 / oz**
- **LOM EBITDA of \$310 million and post-tax cash flow of \$155 million**
- **7.5% base case NPV of \$105 million pre-tax (57% IRR) and \$88 million post-tax (47% IRR)**
- **7.5% NPV of \$157 million pre-tax (77% IRR) and \$140 million post-tax (68% IRR) with 10% increase in metal prices**
- **Encouraging project economics to support debt finance to minimise dilution**
- **Ongoing optimisation of the project to improve the economics and extend the mine life**

\* Assumes metal prices of \$3.60/lb copper, \$1.20/lb zinc, \$1,825/oz gold and \$27/oz silver.

**Ryan McDermott, Chief Executive Officer, commented:** "The updated EM shows an impressive "starter" operation that delivers revenue of \$784 million with a pre-tax 7.5% NPV of \$105 million and an IRR of 57%. This significant increase in the NPV from the previous EM (August 2019) is a product of increased M&I resources, a higher head grade for copper, the use of ATS to recover gold and silver, and an increase in ore processing capacity from 1.6 to 2.1 million tonnes per year. The NPV is also well in excess of pre-production capital costs.

"In conjunction with Hard Rock Consulting LLC ("HRC") of Lakewood, Colorado, the Phoenix team has developed this model using the drilling, metallurgical, and engineering data completed since the last reported EM. The work that has been completed since that time has resulted in a base case model with a 10-year operating life that produces the full suite of Empire metals; copper, zinc, gold, and silver.

"The addition of gold and silver production from the Empire open pit, made possible by last year's drilling and metallurgical test work, has contributed significantly to our project's positive economics. The new model uses a 0.5% copper cut-off grade and assumes mining and processing of 14.3 million tonnes of M&I ore in two phases, leading off with copper and zinc production in the first three years of operations, and adding gold and silver production from the fourth year of operations.

"This two phase plan allows for the initial production of copper and zinc by heap leaching over a seven year open pit mine life, followed by the rehandling of the heaps into a gold and silver recovery circuit beginning in Year 4 and continuing through to year 10. For the purposes of this EM, open-pit operations currently end in Year 7, although we are confident that we will extend this mine life. The initial capital requirement for this two-phase approach is estimated at \$52 million, and the model indicates that, at current metal prices, the mine can pay back this initial capex in less than two years.

"This new Empire EM is timely, coinciding with elevated copper and silver markets, a stable zinc market, and a respectable gold price. The new administration in Washington D.C. is actively encouraging the clean energy revolution which would include the

development of metals essential for electrification projects. Our Empire copper resources fit neatly into that category, as will our use of environmentally friendly ATS for the processing of our precious metals. I expect to see these positive trends continue as we move further away from the uncertainties of 2020.

"We continue to be focused on optimising and refining the project in order to submit our Plan of Operations for Phase 1 of the project in order to commence the final stages of the production permitting process, with production still targeted for 2022. Metallurgical test work and mine optimisation and engineering is ongoing, with a view to improving the project economics and extending the mine life. This will be achieved by processing additional existing M&I resources, and by adding Inferred resources to the production schedule once they have been upgraded to M&I.

"We are also looking forward to a rewarding exploration season, particularly at our recently discovered Red Star high grade silver-lead zone at Empire, and the Navarre Creek gold property. The planning and scheduling of geophysical surveys and drill targeting at both these properties is underway, and we hope to be drilling on both properties this summer. This is an exciting time for our Company and I look forward to providing shareholders with further updates as they become available."

## Empire Mine Economic Model Summary - Base Case

		HEAP LEACH SX -EW Cu/Zn OPERATION YEARS 1 TO 7	ATS AGITATION LEACH Au/Ag OPERATION YEARS 4 TO 10
<b>PRODUCTION</b>			
<b>Total ore (at a 0.5% copper cut-off)</b>	<b>tonnes</b>	<b>14,317,207</b>	<b>14,317,207</b>
Total tonnes ore & waste	tonnes	55,018,098	
Contained copper	tonnes	76,556	
Contained zinc	tonnes	26,782	
Contained gold	ounces		141,205
Contained silver	ounces		6,005,694
Copper recovery	%	76	
Zinc recovery	%	50	
Gold recovery	%		83
Silver recovery	%		77
Scheduled Ore Production	per day	5,625	5,625
Scheduled Ore Production	per year	2,100,000	2,100,000
Mine life	years	6.8	6.8
Copper recovered (LOM)	tonnes	58,183	
Zinc recovered (LOM)	tonnes	13,391	
Copper equivalent recovered (LOM)	tonnes	62,647	
Average annual copper equivalent production years 1 to 7	tonnes	9,213	
Saleable gold recovered (LOM)	ounces		117,200
Saleable silver recovered (LOM)	ounces		4,624,384
Gold equivalent recovered (LOM)	ounces		185,616
Average annual gold equivalent production years 4 to 10	ounces		27,296
<b>REVENUE (LIFE OF MINE)</b>			
Copper price	\$/pound	3.60	
Copper revenue	\$	461,776,280	
Zinc price	\$/pound	1.20	
Zinc revenue	\$	35,426,448	
<b>Net Cu/Zn revenue after royalties, freight, insurance &amp; TC</b>	<b>\$</b>	<b>467,212,591</b>	
Gold price	\$/oz		1,825
Gold revenue	\$		213,889,626
Silver price	\$/oz		27.00
Silver revenue	\$		124,858,374
<b>Net Au/Ag revenue after royalties, freight, insurance &amp; TC</b>	<b>\$</b>		<b>316,405,194</b>
<b>OPERATING COSTS (LIFE OF MINE)</b>			
Mining	\$	102,575,000	10,725,000
Processing	\$	128,533,000	203,339,060
G&A and property tax	\$	21,690,000	6,809,524
<b>Total operating costs</b>	<b>\$</b>	<b>252,798,000</b>	<b>220,873,584</b>
Cash operating cost	\$/tonne ore	17.66	
Cash operating cost	\$/lb copper equ	1.83	
Cash operating cost	\$/tonne ore		15.45
Cash operating cost	\$/oz gold equ		1,190
<b>EBITDA (LIFE OF MINE)</b>	<b>\$</b>	<b>214,414,591</b>	<b>95,531,610</b>
<b>CAPITAL</b>			

<b>COSTS</b>				
	Pre-production capital costs	\$	52,673,000	36,837,000
	Sustaining capital	\$	24,175,000	7,000,000
	Equipment finance costs	\$	10,635,000	
<b>PRE-TAX CASH FLOW (LIFE OF MINE)</b>			<b>\$</b>	<b>126,931,591</b>
	Federal & State tax	\$	17,069,000	7,605,028
<b>POST-TAX CASH FLOW (LIFE OF MINE)</b>			<b>\$</b>	<b>109,862,591</b>
	Ave annual Cu/Zn post-tax cash flow in years 1 to 7	\$	16,156,263	
	Ave annual Au/Ag post-tax cash flow in years 4 to 10	\$		6,483,762

<b>LOM NPV</b>	<b>Pre Tax</b>	<b>Post Tax</b>
5.0%	124,951,217	105,707,169
<b>7.5%</b>	<b>105,171,561</b>	<b>87,995,963</b>
10.0%	88,211,433	73,394,787

<b>Metal Price Sensitivity</b>	<b>LOM NPV (7.5%)</b>		<b>IRR %</b>	
	<b>Pre Tax</b>	<b>Post Tax</b>	<b>Pre Tax</b>	<b>Post Tax</b>
+10%	157,429,610	139,842,247	77	68
<b>0</b>	<b>105,171,561</b>	<b>87,995,963</b>	<b>57</b>	<b>47</b>
-10%	52,913,511	36,382,354	34	25

## Background on the Empire Mine Open Pit Project

This updated EM has been prepared in conjunction with HRC, has been derived following the publication in October 2020 (reported on 9 December 2020) of an updated NI 43-101 compliant resource, which incorporated the 32 hole, 1,700-metre Empire 2020 reverse-circulation and core drilling programme results. The new economic model uses current market data and will form the basis of the operating plan for permitting purposes, and future feasibility studies.

Further mine planning and optimisation has resulted in an economic model utilising two separate processing circuits, with approximately 14.3 million tonnes of ore production, at 2.1 million tonnes per annum at a 0.5% copper cut-off grade, over the initial seven years. The ore will be processed sequentially, first for copper-zinc utilising standard heap leach SX/EW, followed by gold-silver recovery in an ATS circuit. In Year 4 of operations, the ore previously leached for copper-zinc will be moved from the Phase 1 leach pad and introduced to the gold-silver circuit. The heaps will be staged such that copper-zinc leaching can continue with ore stacked to the pad in Years 4 through 7, and then moved to the precious metals circuit after the copper-zinc recovery reaches its optimal level. Open-pit operations currently end in Year 7 with residual copper-zinc leaching continuing through maximum recovery, and the gold-silver circuit operating through to Year 10.

The Company has used the pit production schedule prepared by HRC, and production, capital and operating cost estimates prepared by Phoenix staff in conjunction with HRC.

The model is summarised above and can also be found on the Company's website at [www.phoenixcopperlimited.com](http://www.phoenixcopperlimited.com).

## Qualified Person

The information in this announcement has been reviewed by Roger Turner A.C.S.M., M.Sc., M.I.M.M., C.Eng., Chief Technical Officer and Director of the Company. Mr Turner is a graduate mining engineer from the Camborne School of Mines with an MSc in Economic Geology from Leicester University with more than 40 years' experience in mine development, construction and operation and is a qualified person under the AIM Rules. Mr Turner consents to the inclusion of the information in the form and context in which they appear.

## Environmental, Social, and Corporate Governance

Phoenix is committed to meeting and exceeding the environmental standards required by law as a core value of the Company. The baseline environmental data collected to date will be used for furthering the permitting process, but as importantly, will be used as the building blocks for the Company's future Environmental, Social, and Corporate Governance ("ESG") platform.

## Market Abuse Regulation (MAR) Disclosure

Certain information contained in this announcement would have been deemed inside information for the purposes of Article 7 of Regulation (EU) No 596/2014 until the release of this announcement.

## Contacts

For further information please visit [www.phoenixcopperlimited.com](http://www.phoenixcopperlimited.com) or contact:

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## Notes

Phoenix Copper Limited is a North American focused, base and precious metal emerging producer and exploration company, which has carried out a drilling programme and generated a copper, gold, silver and zinc resource on which it is carrying out a feasibility study to bring the historically producing Empire Mine in Idaho, USA, back into production. It is also evaluating the silver and gold resources around three other past producing mines within the 23 km<sup>2</sup> Empire claims block as well as cobalt in two claims blocks north of Empire in Idaho.

Phoenix's primary operations are focused near Mackay, Idaho in the Alder Creek mining district. This district includes the historical Empire, Horseshoe, White Knob and Blue Bird Mines, past producers of copper, gold, silver, zinc, lead and tungsten from underground mines in the first half of the twentieth century. Additionally, the district includes Navarre Creek a Carlin-trend gold discovery which hosts a 6.1 km gold strike length within a 9.8 km<sup>2</sup> area.

Phoenix acquired an 80% interest in the historical Empire Mine property in 2017 and, based on a total of 320 drill holes, an oxide resource was completed in late 2017. A NI 43-101 compliant PEA (preliminary economic assessment) for an open pit heap leach solvent extraction and electrowinning ("SX-EW") mine was completed in April 2018. In 2018 a further 8,600 metres in 93 holes was completed to upgrade the oxide resources, provide samples for ongoing metallurgical test work, geotechnical and hydrological studies and condemnation drilling for the heap leach pad site, waste dump and plant site. An updated NI 43-101 compliant resource was completed in early May 2020 and October 2020 for all metals. Present contained metal in all NI 43-101 compliant categories of resources, measured, indicated and inferred, stand at 355,523 ounces of gold, 129,641 tonnes of copper, 10,133,772 ounces of silver and 58,440 tonnes of zinc. Following the latest NI 43-101 compliant resource, Phoenix updated its economic model in February 2021 to include the processing of all contained metals through a two phased approach.

Since acquiring the Empire project, Phoenix has increased the claim area from 818 acres to 5,717 acres, mainly to the northwest and west, and in so doing has increased the potential for additional oxide and sulphide copper resources, as well as the potential for stand-alone gold and silver resources, along a strike length of approximately 5.4 km towards the other brownfield mines of the Horseshoe, White Knob and Blue Bird Mines now within the property boundary. In particular, a new discovery at Red Star, 330 metres north west of the Empire Mine proposed open pit, has revealed sulphide ore and from three shallow exploration drill holes a NI 43-101 compliant maiden resource of 1.6 million silver equivalent ounces was reported.

At Empire, it is estimated that less than 1% of the potential ore system has been explored to date and, accordingly, there is significant opportunity to increase the resource through phased exploration.

More details on the Company, its assets and its objectives can be found on PXC's website at [www.phoenixcopperlimited.com](http://www.phoenixcopperlimited.com).

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