

**Panoro Minerals Ltd.**  
(TSXV: PML / OTC: POROF / BVL: PML)

**BUY**

**Current Price: C\$0.12**  
**Fair Value: C\$0.77**  
**Risk: 5**

**Wheaton Precious Funded Copper-Gold Junior in Peru with Hudbay as the Largest Shareholder - Initiating Coverage**

**Sector / Industry: Junior Mining**

[Click here for more research on the company and to share your views](#)

**Highlights**

- Panoro Minerals Ltd. (“company”, “PML”) is a copper focused junior with nine projects in Southern Peru. **Hudbay Minerals (TSX: HBM) owns 12%, and is the largest shareholder.**
- PML’s portfolio includes two advanced stage assets - Cotabambas (copper-gold) and Antilla (copper) – with a combined After-Tax Net Present Value (“AT-NPV”) at 7.5% of US\$989M, per Preliminary Economic Assessments (“PEA”) completed on the projects. **Panoro’s Enterprise Value (“EV”) of \$28M is just 2% of the combined AT-NPV.**
- Cotambas and Antilla have a 3.9 billion pounds (“Blbs”) copper equivalent indicated, and 6.6 Blbs inferred resource, which also includes 0.9 Moz indicated and 3.4 Moz inferred gold. **PML’s shares are currently trading at just ¢0.4 per lb (U.S.) versus an average of ¢2.4 for companies with large copper focused projects in the Americas.**
- It is estimated that Cotabambas, PML’s largest project, will produce 131 Koz gold equivalent (gold + silver), and 155 Mlbs copper per year, or 272 Mlbs copper equivalent, in the first 10 years of production, at a cash cost of just US\$0.59/lb at spot prices. The initial CAPEX is estimated to be US\$1.5B. **Wheaton Precious Metals (TSX: WPM) has committed to provide US\$140M in financing.**
- In addition to its two flagship assets, PML maintains royalty interests in projects sold to Hudbay and Mintania, a Peruvian producer. Another project is joint ventured with Japan Oil, Gas and Metals National Corporation (JOGMEC). Over the next four years, PML is expected to receive approximately US\$17M from previous asset sales to Hudbay and Mintania, the joint venture agreement with JOGMEC, and the streaming agreement from Wheaton. **As a result, PML will not have to do any equity financings in the near-term.**

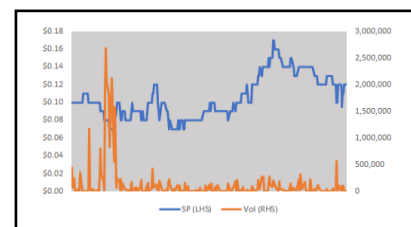
**Risks**

- Relatively larger projects, such as Cotabambas and Antilla, tend to have **higher CAPEX.**
- As porphyry projects are of relatively low-grade, they are **highly sensitive to copper prices.**
- Wheaton Precious has an option to terminate the financing agreement.
- Project financing on Antilla may take longer than expected.
- **Development, EIA, and permitting risks.**

**Sid Rajeev, B.Tech, MBA, CFA**  
Head of Research

**Lavish Ramrakhani**  
Equity Associate

**Price Performance (1-year)**



	YTD	12M
Ret.	50%	20%
TSXV	19%	29%

**Company Data**

52 Week Range	C\$0.07–C\$0.17
Shares O/S	264,056,272
Market Cap.	C\$32 million
Yield (forward)	N/A
P/E (forward)	N/A
P/B	0.5x

Key Financial Data (FYE - Dec 31)		
(C\$)	FY2019	FY2020 (6M)
Cash	\$470,085	\$1,520,981
Working Capital (adj.)	-\$793,214	\$3,931
Mineral Assets	\$75,666,265	\$74,901,900
Total Assets	\$76,532,461	\$79,349,867
Net Income (Loss)	-\$5,181,476	\$468,825
EPS	-\$0.02	\$0.00

**\*See last page for important disclosures, rating and risk definitions. All figures in C\$ unless otherwise specified.**

## Overview

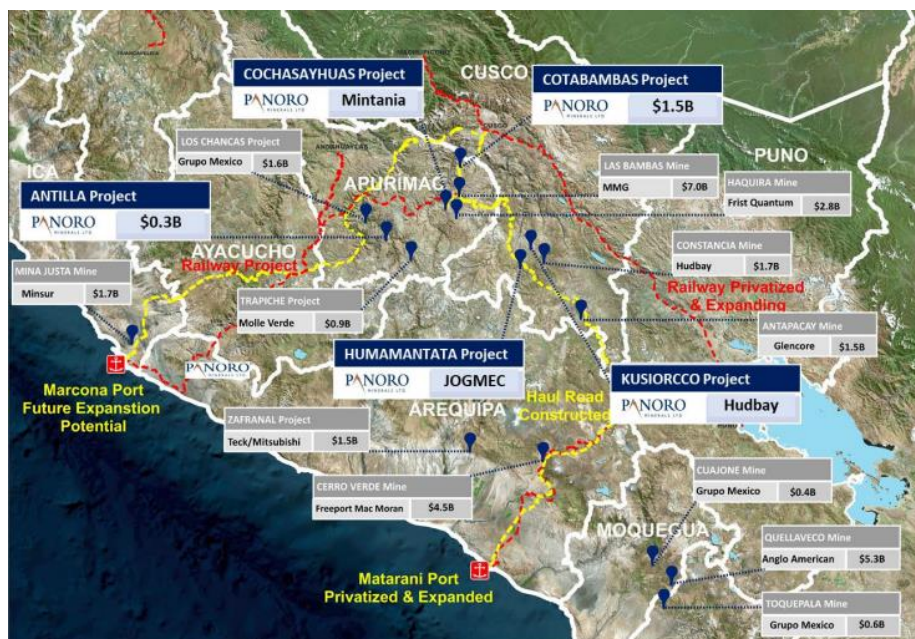
Panoro holds a portfolio of nine projects in Peru; the second largest copper producer in the world behind Chile. In 2019, the Fraser Institute Survey of Mining Companies ranked Peru as the third best jurisdiction for investment attractiveness in South America, behind Chile and San Juan (Argentina). Panoro's portfolio includes **two advanced stage assets**, Cotabambas (copper-gold-silver) and Antilla (copper), and seven exploration stage projects in the prolific Apurimac-Cusco region in Peru.

Nine projects in the prolific Apurimac-Cusco region in southern Peru

### Panoro's Portfolio in Peru



1	Cotabambas Copper-Gold-Silver	PEA Complete	WHEATON PRECIOUS METALS	Resource Expansion
2	Antilla Copper	PEA Complete	Improved Recoveries	Feasibility
3	Kusiorecco Copper	Cash & 2% Royalty	HUBBAY	Exploration Permitting
4	Humamantata Copper	\$10.8 M Funding	JOGMEC Jointly Owned and Operated Special Corporation	Early Exploration
5	Cochasayhuas Gold-Silver	Cash & 5% Royalty	MINTANIA SAC	Development Permitting



Source: Company

Cotabambas is 40 km north of the large open-pit Las Bambas copper mine, and Antilla is between Grupo Mexico's (BMV: GMEXICOB) Los Chancas and Buenaventura's (NYSE: BVN) Trapiche project – both advanced stage copper projects. As shown in the above map, **the region is host to multiple large-scale copper projects** held by majors such as Hudbay (TSX: HBM), Glencore (LSE: GLEN), Anglo American (LSE: AAL), MMG, and Freeport-McMoRan (NYSE: FCX).

*Close to several large copper deposits / Favorable location and infrastructure*

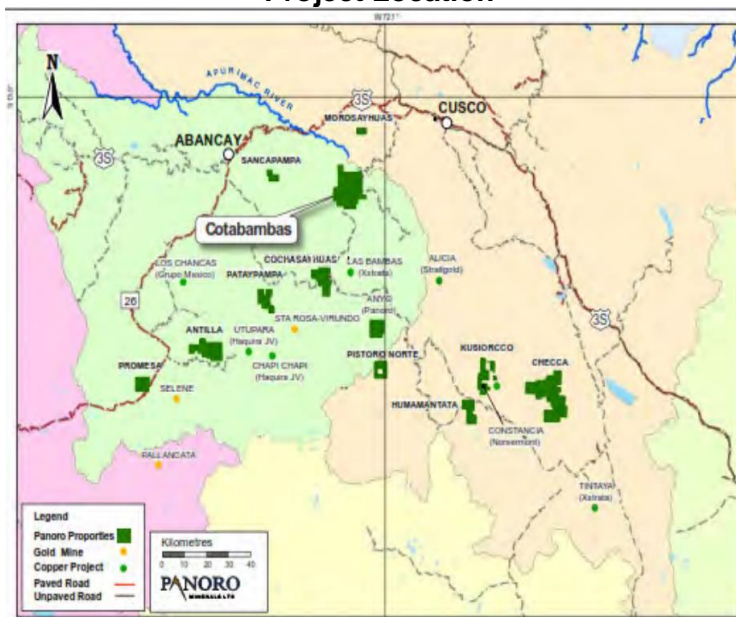
As a result, infrastructure in the region is good with power lines, access roads to two ports (Marcona and Matarani), and skilled labour. As Panoro's projects range from early exploration to advanced stage development assets, we believe its shares offers an **attractive opportunity for investors seeking exposure to copper exploration and development in one of the most attractive copper producing areas in the world**. The following sections summarize PML's core assets.

## Cotabambas Project

### Location

The Cotabambas project is 48 km southwest of Cusco, 60 km east of Abancay (capital of the Apurimac region), 500 m northwest of the town of Cotabambas, and 545 km southeast of Lima (capital of Peru). The project is accessed by a three-hour drive from Cusco via a paved highway and a gravel road. The main haul road to the Las Bambas mine is connected to Cotabambas via a 10 km access road.

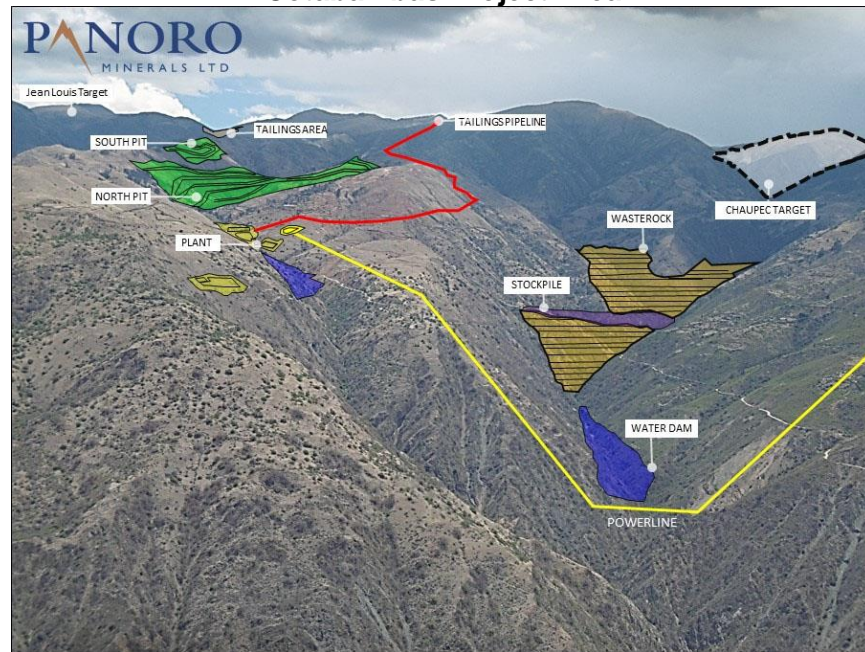
### Project Location



Source: Technical Report

The region's terrain is mountainous (see image below). Water is sourced from nearby streams. If advanced to production, the project can be connected to the national electrical grid through a 61 km new transmission line from Abancay to Cotabamba, or from the Las Bambas mine. Power costs are relatively low in Peru as hydroelectricity accounts for more than 50%.

### Cotabambas Project Area



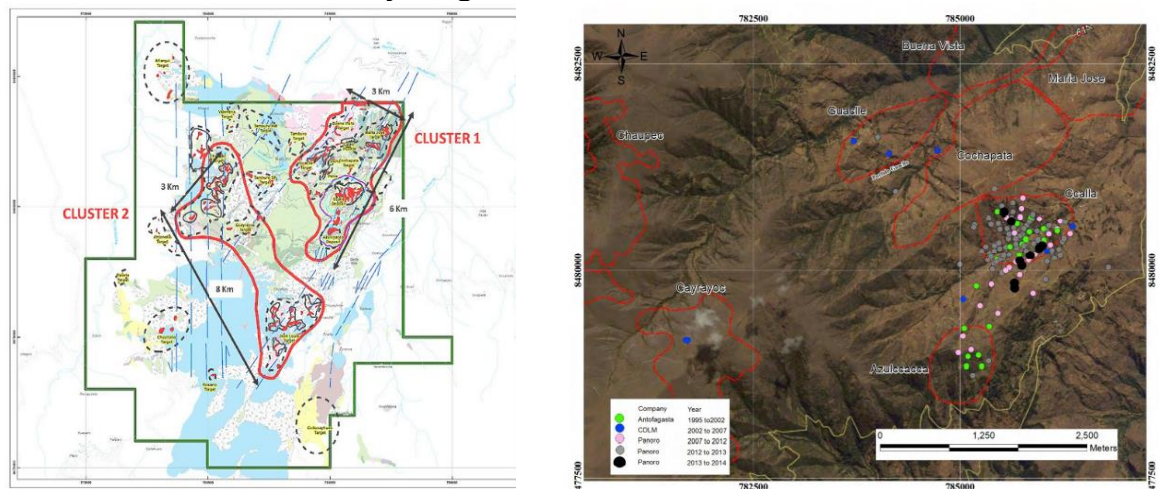
Source: Technical Report

### Historic Exploration

The property was previously explored by Antofagasta / LSE: ANTO (1995 – 2002/24 holes totaling 8,538 m), followed by CDLM - a JV between ANTO and Vale/NYSE: VALE (2002 – 2006), and then by Panoro since 2007. **A total of 196 holes (162 drilled by Panoro) totaling 84,786 m have been drilled since 1995.**

Previously explored by Antofagasta and Vale

### Key Targets / Drill Locations



Source: Company

The project consists of two clusters of mineralized areas – Cluster 1 (mainly porphyry) in the northeast covering an area of 3km x 6km, and Cluster 2 (mainly

skarn) in the southwest (potentially 3 km x 8km). **Most of the historic drilling has been focused on Cluster 1.**

**Mineralization and Resource Estimate**

Similar to large copper projects in the region, Cotabambas holds porphyry deposits across two zones - Ccalla and Azulccacca - covering a 2.5 km x 1.5 km area within Cluster 1. **Porphyry projects tend to hold large tonnage, lower grade deposits.** Cotabambas’ mine plan consists of two pits – the North pit (containing Ccalla), and the smaller South pit (containing Azulccacca). Primary mineralization occurs mostly in hypogene sulphides, from surface up to 500 m depth.

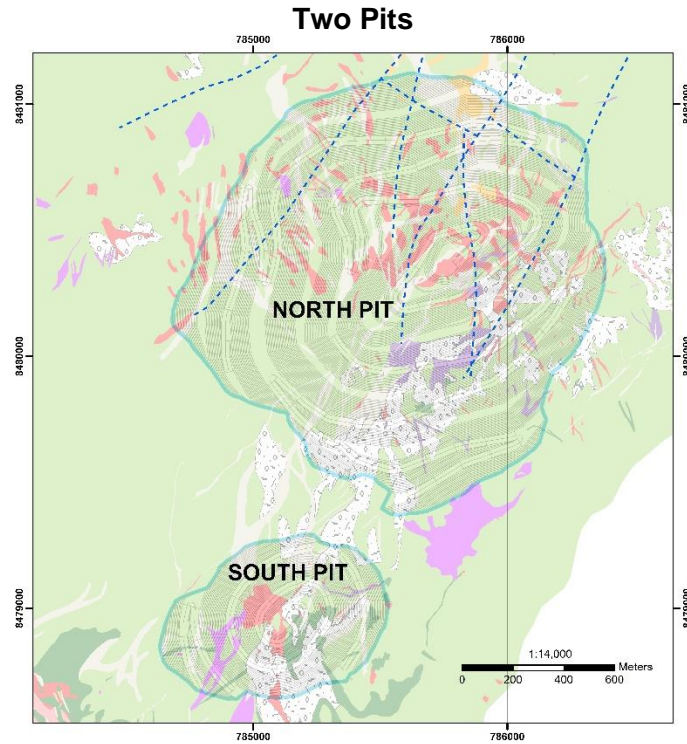
The most recent resource estimate, completed in 2015, showed an indicated resource of 1.09 Blbs Cu and 0.86 Moz Au, and an inferred resource of 4.16 Blbs Cu, and 3.38 Moz Au, with minor silver and molybdenum. **Note that these estimates are large enough for the project to be standalone copper and gold mines.** Grades are in line with porphyry deposits.

**2015 Resource Estimate**

Resources Category	Zone	Cut-Off Grade% CuEq	Million Tonnes	Cu (%)	Au (g/t)	Ag (g/t)	Mo (%)	Cu (Bib)	Au (Moz)	Ag (Moz)	Mo (Mib)
Indicated	Hypogene Sulphide	0.2	84.2	0.37	0.21	2.73	0.0018	0.69	0.58	7.39	3.43
	Supergene Sulphide	0.2	8.9	0.73	0.31	3.07	-	0.14	0.09	0.88	0.01
	Oxide Copper-Gold	0.2	23.8	0.49	0.24	2.63	-	0.26	0.18	2.01	0.01
	Oxide Gold	Na	0.2	-	0.66	3.74	-	-	0	0.02	-
	<b>Total</b>			117.1	0.42	0.23	2.74	0.0013	1.09	0.86	10.3
Inferred	Hypogene Sulphide	0.2	521	0.29	0.18	2.41	0.0021	3.36	2.94	40.35	24.22
	Supergene Sulphide	0.2	7.4	0.73	0.18	1.93	0.0007	0.12	0.04	0.46	0.11
	Oxide Copper-Gold	0.2	75.8	0.41	0.15	1.82	0.0003	0.68	0.37	4.44	0.5
	Oxide Gold	Na	1.2	-	0.61	3.27	-	-	0.02	0.12	-
	<b>Total</b>	0.2	605.3	0.31	0.17	2.33	0.0019	4.16	3.38	45.37	24.83

Source: Company

*1.1 Blbs copper and 0.9 Moz gold indicated, and 4.2 Blbs copper and 3.4 Moz gold inferred*



Source: Company

### 2015 PEA

A PEA completed in 2015 was based on conventional open pit mining, followed by crushing, grinding and flotation processing at 80,000 tonnes per day (“tpd”) for a mine life of 19 years. The PEA used 422 Mt (north pit) and 61 Mt (south pit) for a total of 483 Mt, which is 80% of the sulphide resource, and 67% of the total resource. Produced concentrates will be trucked 600 km to the Matarani port.

The initial CAPEX was estimated to be US\$1.49B, and the OPEX was estimated to be US\$1.22/lb. Based on US\$3/lb copper and US\$1,250/oz gold, the study returned an AT-NPV at 7.5% of US\$684M, with an AT-IRR of 16.7%. **We note that an AT-IRR of over 15% is attractive for large projects.** The PEA assumed that 100% of the project’s CAPEX is funded by equity. The actual IRR will be higher as a significant portion of the CAPEX will be funded through debt and/or streaming arrangements. The following tables summarize the PEA’s assumptions and results.

*Robust PEA; AT-NPV at 7.5% of US\$684M at US\$3/lb copper*

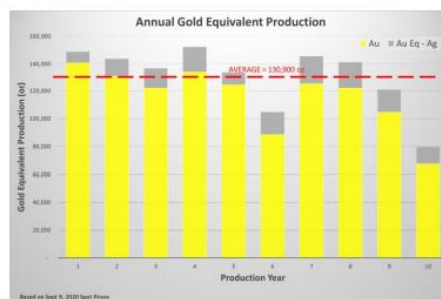
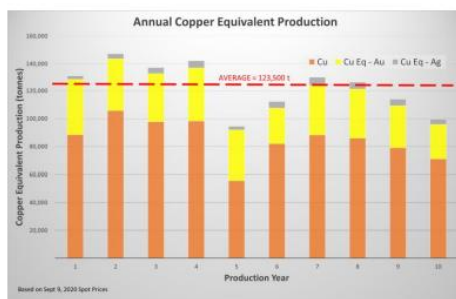
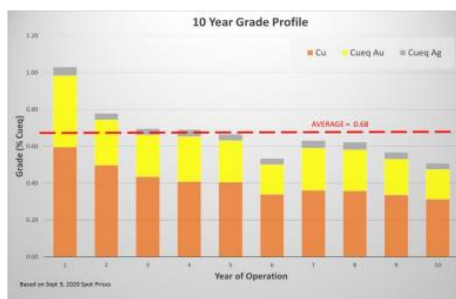
<b>2015 PEA</b>	<b>80,000 tpd</b>
Payable Metal	Cu - 2,638 Mlbs Au - 1.6 Moz Ag - 17.3 Moz
Annual Production	Cu - 155 Mlbs Au - 95.1 Koz Ag - 1.02 Moz
Mine Life (years)	19
Commodity Prices	US\$3.00/lb Cu, US\$1,250/oz Au, US\$18.5/oz Ag
Cash Costs (C1) (\$/lb)	\$1.22
Total Start-up Capital (US\$M)	\$1,486
Payback Period (years)	3.6
After-tax IRR (%)	16.7%
After-tax NPV @7.5% (US\$M)	\$684

Mineralization Type	Recovery			Concentrate Grade		
	Cu %	Au %	Ag %	Cu %	Au g/t	Ag g/t
Hypogene Sulphide	87.5	62.0	60.4			
Supergene Sulphide	87.5	62.0	60.4			
Mixed Oxide Cu-Au	60.0	55.0	—			
Oxide High Au	—	65.0	—			
<b>Overall Life-of-Mine Average *</b>	<b>80.4</b>	<b>61.3</b>	<b>52.2</b>	<b>27.0</b>	<b>11.5</b>	<b>130</b>

Source: Company / FRC

The PEA projects an annual production of 155 Mlbs copper and 95 Koz gold for the life-of-mine. **Production is significantly higher in the first 10 years due to higher grades in the initial years.** As shown by the chart on the bottom-right, annual gold production in the first 10 years is estimated to be 131 Koz gold equivalent (including silver), and annual copper production is estimated to be 155 Mlbs. **At spot prices, the cash cost is estimated to be just US\$0.59/lb in the first 10 years.**

131 Koz gold per year, and 272 Mlbs copper equivalent per year in the first 10 years



Source: Company

The following table shows the sensitivity of AT-NPV and AT-IRR to copper and gold prices. **At US\$1,400/oz gold and US\$3/lb copper, which are our long-term forecasts, the AT-NPV at 7.5% increases to US\$773M.**

CU PRICE (US\$/LB)	GOLD PRICE (\$US/OZ)				
	1,100	1,200	1,250	1,300	1,400
2.75	351.7 / 12.6	412.9 / 13.4	443.4 / 13.8	473.8 / 14.2	534.3 / 14.9
3.00	594.5 / 15.6	654.1 / 16.4	<b>683.9 / 16.7</b>	713.7 / 17.1	773.0 / 17.8
3.25	832.8 / 18.4	891.6 / 19.1	921.0 / 19.5	950.3 / 19.8	1,008.8 / 20.5

**At spot prices, the AT-NPV at 7.5% increases to US\$1.22B, with an AT-IRR of 23%, and a very low life-of-mine cash cost of US\$0.64/lb.**

After Tax Metrics		September 9, 2020 Spot Metal Price	PEA Metal Price Assumptions	Improvement From PEA
Net Present Value	million USD	\$1,220	\$683	79% ↑
IRR	%	22.8%	16.7%	37% ↑
Payback	years	2.8	3.6	22% ↑
C1 Cash Cost	USD per lb Cu	\$0.64	\$1.22	47% ↑
Breakeven Cu Price	USD per lb Cu	\$1.35	\$1.91	29% ↑
Cu Spot Price	USD/lb	\$3.07	\$3.00	2% ↑
Au Spot Price	USD/oz	\$1,946	\$1,250	56% ↑
Ag Spot Price	USD/oz	\$26.89	\$18.50	45% ↑

Source: Company

*AT-NPV at 7.5% increases to US\$1.2B at spot prices*

### Project Financing

In 2016, Panoro entered into a precious metals purchase agreement with Wheaton Precious Metals, wherein Wheaton will pay Panoro **upfront cash payments totaling US\$140M**, in exchange for 25% of gold, and 100% of silver production, until 90 Moz silver equivalent is delivered. Thereafter, Wheaton will receive 16.67% of gold and 66.67% of silver production. Wheaton will pay the lesser of the market price, and US\$450/oz for gold, and US\$5.90/oz for silver, increasing 1% p.a. from year five of production.

Wheaton has paid US\$10M so far to Panoro, and an additional US\$4M will be paid over the next three years. The remaining US\$126M will be paid in instalments during construction. Note that Wheaton has the right to terminate the agreement at any point up to 90 days following a feasibility study (“FS”), and demand a refund of all the prior payments less US\$2M. Wheaton can opt to be paid in cash or shares. If Wheaton opts for cash, PML has the right to defer payments for up to two years.

**We believe this streaming arrangement is a strong vote of confidence on Cotabambas and Panoro’s management.** The current agreement for US\$140M accounts for approximately 10% of the project’s initial CAPEX estimate. We believe the company will be able to source up to 60% from debt, and the remaining equity either from selling additional royalties to Wheaton, sale of non-core assets, or by attracting a joint venture partner. PML will need US\$50M to advance the project to

*Funding from Wheaton Precious*

*Remaining funding to come from debt, additional sales of royalties, and/or a potential JV partner*



a feasibility study. **Our discussions with management indicated that they have no intent of raising equity to fund development and dilute shareholders.** Although Wheaton has an option to terminate the agreement, we believe its probability is low, considering the project’s robust economics, and the fact that Wheaton has been making their committed payments on time for five years.

**Exploration & Development Upside**

Subsequent to the PEA, **in order to expand existing resources**, PML completed geologic mapping, sampling, geophysical surveys and drilling at several targets near the two proposed pits. Additional sulphide resources will improve the project’s economics shown by the PEA. Note that the PEA **did not account for the project’s oxide resource**, which can be exploited by adding a heap leach, Solvent Extraction Electrowinning (SX/EW) plant.

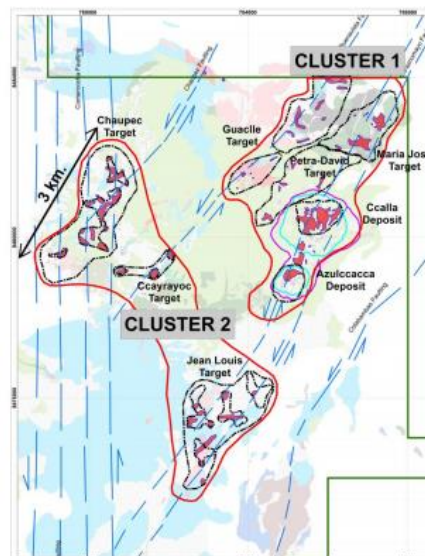
The company has also **identified eight exploration targets** outside the existing resource, mostly higher-grade skarn type mineralization. The following targets have been identified for priority exploration:

*Resource expansion drilling*

- Maria Jose & Petra-David targets (porphyry) in Cluster 1: located within 2 km of the proposed North pit.
- Chaupec target (skarn) in Cluster 2: located 4 km west of the Ccalla pit.
- Guacile target in Cluster 1 (skarn): located between the North pit and Chaupec
- Jean Louis target in Cluster 2: located 5 km south of Azulccacca pit.

PML is planning to conduct geophysics and 2,000 m of drilling (seven to eight holes) each at Guacile and Chaupec during 2021, for a US\$2.2M budget.

**Priority Targets**



Source: Company

Management’s development plan for the project is to complete a bankable FS on the oxide resource by 2023 (US\$9M budget), followed by three years construction/permitting, and commence production by 2025-2026.

## Antilla Project

### Location

The 7,500 ha Antilla property is close to the village of Antilla, 140 km southwest of Cusco (eight-hour drive), and 145 km south of Abancay. The project is located on the northern slope of a steeply eroded valley.

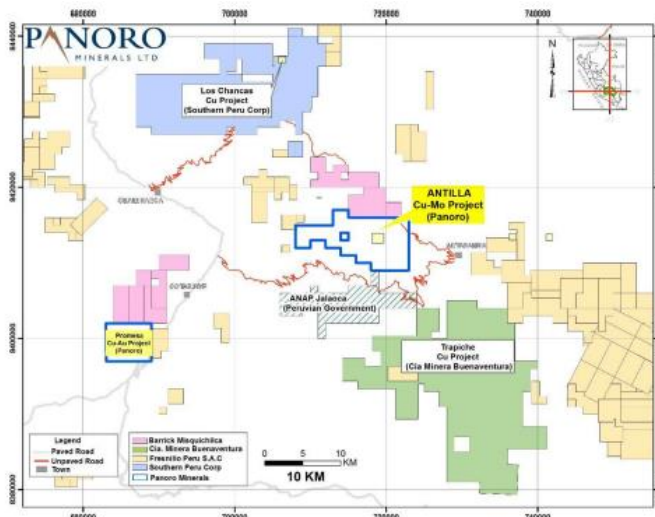
### Project Location



Source: Technical Report

Antilla is close to two advanced stage projects – the Los Chancas copper-molybdenum project held by Grupo Mexico, and the Trapiche copper project held by Minera Buenaventura.

Close to two advanced stage projects held by large players



Source: Company

There is a power line 7 km south of the proposed pit. Water can be sourced from creeks and rivers in the region.

### Historic Exploration and Mineralization

Mineralization was discovered in 2002, and since then, the property was drilled by three companies (96 holes totaling 15,385 m) between 2003 and 2010. Panoro drilled 49 holes between 2008 and 2009.

Similar to Cotabambas, the project holds a copper porphyry deposit, but with molybdenum instead of gold and silver. The current resource estimate covers a 1.5 km x 1.6 km area. However, there are a **number of untested targets** over a much larger 3 km x 6 km area.

### Resource Estimate and PEA

The most recent resource estimate, calculated in 2015, showed an **indicated resource of 2.2 Blbs copper at 0.34%, and an inferred resource of 0.52 Blbs at 0.26%**, with minor molybdenum. Relative to Cotabambas, Antilla is of lower tonnage and slightly lower grades.

#### 2015 Resource

DOMAIN	QUANTITY '000 TONNES	GRADE		
		CU %	MO %	CUEQ%
<b>Indicated</b>				
Overburden/Cover	5,600	0.25	0.01	0.28
Leach Cap	13,400	0.25	0.01	0.27
Supergene	168,900	0.41	0.01	0.42
Primary Sulphides	103,900	0.24	0.01	0.26
<b>Total Indicated</b>	<b>291,800</b>	<b>0.34</b>	<b>0.01</b>	<b>0.36</b>
<b>Inferred</b>				
Overburden/Cover	500	0.22	0.009	0.24
Leach Cap	13,400	0.21	0.008	0.22
Supergene	25,900	0.34	0.008	0.36
Primary Sulphides	50,700	0.24	0.007	0.25
<b>Total Inferred</b>	<b>90,500</b>	<b>0.26</b>	<b>0.007</b>	<b>0.28</b>

Source: Technical Report

A PEA completed in 2018 was based on a 17-year open-pit operation, followed by crushing, heap leach and SX/EW to produce copper cathodes, trucked to the Marcona port. The study used 119 Mt at 0.43% copper from near surface secondary sulphides, accounting for 60% of the secondary sulphides contained in the resource estimate, and just over 30% of the total resource estimate. **Based on US\$3.05/lb copper, the study returned an AT-NPV at 7.5% of US\$305M and a high AT-IRR of 25.9%. The initial CAPEX was estimated at US\$250M.** A previous PEA completed in 2016, using 350 Mt of both primary and secondary sulphides (conventional flotation process) had returned an AT-NPV at 7.5% of US\$225M, and an AT-IRR of 15.1%, based on an initial CAPEX of US\$603M.

2.2 Blbs copper indicated, and 0.5 Bls inferred

Lower CAPEX project and a high AT-IRR of 25.9%

AT-NPV at 7.5% of US\$305M at US\$3.05/lb copper

<b>2018 PEA</b>	<b>20,000 tpd</b>
Payable Metal	Cu 787.5 Mlbs
Annual Production	46.3 Mlbs
Mine Life (years)	17
Commodity Prices	US\$3.05/lb Cu
Cash Costs (C1) (\$/lb)	\$1.51
Recovery	72.1%
Initial CAPEX (US\$M)	\$250.4
After-tax IRR (%)	25.9%
After-tax NPV @7.5% (US\$M)	\$305.4
Payback Period (years)	3

Copper Price (US\$/lb)	NPV @ 5% (US\$M)	NPV @7.5% (US\$M)	After-Tax NPV @ 10% (US\$M)	IRR (%)	Payback (years)
\$2.75	\$232	\$169	\$118	18.7%	3.6
\$3.05	\$393	\$305	\$236	25.9%	3.0
\$3.25	\$501	\$397	\$314	30.3%	2.7

Source: Technical Report

Leach testing conducted after the PEA showed that **recovery rates can be improved from 72.5% used in the PEA, to 79.9%**. The following table shows that the project’s AT-NPV can be improved to US\$499M if throughput is increased from 20,000 to 35,000 tpd. This scenario also includes an additional 52 Mt resource due to higher recovery rates. The initial CAPEX for this larger operating scenario is US\$327M. **We believe the project’s scalability is one of its key advantages.** Also, note that the PEA was based on just 30% of the resource estimate.

Significant room for improvement in project economics

KEY PROJECT PARAMETERS (IN USD CURRENCY)		HEAP LEACH PROJECT <sup>2</sup>	HEAP LEACH GROWTH POTENTIAL <sup>3</sup>
Mill Feed, life of mine	million tonnes	118.7	171.1
Mill Feed, daily	tonnes	20,000	35,000
Strip Ratio, life of mine	waste: process feed	1.38 : 1	1.77 : 1
After Tax @ PEA Prices	NPV <sub>7.5%</sub>	305	499
	IRR	25.9	36.9
	Payback	3.0	2.2
Annual Average Payable Metals	Cu	21.0	38.5
	Au	-	-
	Ag	-	-
	Mo	-	0.9
Initial Capital Cost	million USD	250	327

1. Prices in USD  
2. At PEA commodity prices; long-term Cu = \$3.05/lb  
3. Conceptual level estimate, Non 43-101

Source: Company

Management is planning an infill drill program (budgetd at US\$2M), followed by environmental and social permits. Longer-term plans include a bankable FS by 2022 (US\$4M), followed by 1.5 years construction/permitting, and to commence production by 2024-2025.

## Other Projects

In addition to the two flagship assets, PML holds interests in seven other projects (all in southern Peru), of which, two were recently sold (one to Hudbay and one to Mintania / a Peruvian mining company), and one is joint ventured with Japan Oil, Gas and Metals National Corporation (JOGMEC). PML expects to receive US\$3.5M in remaining payments, and maintains royalties in the two divested assets. The project sold to Hudbay (Kusiorcco) is 6 km from Hudbay's Constancia mine. Hudbay is aiming to develop Kusiorcco as a satellite deposit. The project sold to Mintania is a historic gold producer, and Mintania is aiming to put the project back into production in 2021.

Brief summaries of the three projects are shown in the table below:

Project	Humamantata	Kusiorcco	Cochasayhuas
Target Commodities	Copper, Silver, Zinc, Lead	Copper	Gold, Silver
Ownership	JV with JOGMEC (Japan Oil, Gas and Metals National Corporation) to earn 60% by spending US\$8M in the project.	Sold to Hudbay in 2018 for US\$5 million (US\$3.5M received to date); the remaining US\$1.5M will be paid in three installments due upon completion of first, fifth, and tenth drill holes. Panoro retains a 2% NSR.	Sold to Mintania in 2020 for US\$2.45M (\$0.45M received); \$1M due in 2021, \$0.75M in 2022, and \$0.25M in 2024. Panoro retains a 5% NSR for 15 years.
Historic Work	\$4.3 million spent to date, including \$2.6 by JOGMEC  Previous work included rock chip sampling, mapping, geochemical surveys, and mag survey.	\$1.3 million spent to date  Close to Hudbay's Constancia mine; aiming to develop Kusiorcco as a satellite deposit.	\$1.7 million spent to date  Historic producer (401 Koz gold and 480 Koz silver); previous exploration included sampling and a 10 hole drill program.

Source: Company / FRC

JOGMEC has funded US\$2.6M of its US\$8M commitment to earn a 60% interest in the Humamantata project so far. PML is the project's operator. The companies are completing a mapping and rock sampling program, plus geophysical surveys, on three targets to define drill targets. PML has already applied for drill permits.

As shown below, PML is expected to receive US\$17M in funding from the above mentioned three agreements, and the financing agreement with Wheaton Precious from 2020 to 2024. This does not include any upside from potential NSR royalties from the Kusiorcco and Cochasayhuas projects.

Deals with Hudbay, JOGMEC (Japan), and Mintania (a Peruvian producer)

US\$17M in funding expected from 2020 to 2024

### US\$17M in Funding Expected from Various Agreements

	WHEATON	HUBBAY		JOGMEC	MINTANIA		Total Funding	
	Cotabambas Copper-Gold-Silver	Kusiorcco Copper		Humamantata Copper	Cochasayhuas Gold-Silver		Currency	
	Stream Advance	Milestone	NSR Royalty	Expenditures	Scheduled	NSR Royalty	USD	CAD
2020	1.5	0.5	-	1.70	0.45	-	4.2	5.8
2021	1.5	0.5	-	1.00	1.00	0.6	4.6	6.4
2022	1.5	0.5	-	1.67	0.75	0.6	5.0	7.0
2023	1.0	-	-	1.67	0.25	2.0	4.9	6.9
2024	-	-	-	1.67	-	2.0	3.6	5.1
<b>Total</b>	<b>5.5</b>	<b>1.5</b>	<b>-</b>	<b>7.71</b>	<b>2.45</b>	<b>5.2</b>	<b>22.3</b>	<b>31.2</b>

Source: Company

The following table shows our preliminary estimates of potential NSR royalties from the Kusiorcco and Cochasayhuas projects. **Depending on our throughput assumptions, we expect combined annual revenue of US\$2 - US\$6M from the two projects.** Note that there is no guarantee that either of these projects will be advanced to production, so our estimates are very preliminary and speculative. We are not including these estimates in our current valuation models.

Preliminary Annual NSR Estimates - Kusiorcco		
Throughput (tpd)	10,000	30,000
Grade - Cu Equiv.	0.50%	0.50%
Recovery	80%	80%
Copper Produced (Mlbs)	32	95
<b>2% NSR at US\$3/lb Cu - US\$M</b>	<b>\$2.00</b>	<b>\$5.00</b>
Preliminary Annual NSR Estimates - Cochasayhuas		
Throughput (tpd)	100	300
Grade - Au Equiv.	5	5
Recovery	90%	90%
Au Equiv. Produced (Koz)	5	15
<b>5% NSR at US\$1,400/oz Au - US\$M</b>	<b>\$0.35</b>	<b>\$1.00</b>
<b>Total</b>	<b>\$2.35</b>	<b>\$6.00</b>

Source: FRC

The company does not have any immediate plans for the remaining four exploration projects in its portfolio. However, we suspect that management will be on the look out for suitable JV partners.

### Management and Directors

Brief biographies of the management team, as provided by the company, follow. **Management and board members hold 5.75% of the outstanding shares of the company. Hubbay owns 11.67%, and is the largest shareholder.** The company's entire technical team, and three out of eight directors are Peruvian.

Hubbay owns 11.67% and is the largest shareholder

### Share Ownership

Management and Board	Shares	% of Total
Luquman A. Shaheen, President, CEO & Director	1,404,500	0.53%
Augusto Baertl, Chairman (Independent)	-	-
William J. Boden, Director (Independent)	12,504,120	4.74%
Ronald A. Hall, Director (Independent)	350,000	0.13%
Anthony Laub, Director (Independent)	-	-
Christian G. Pilon, Executive Director Peru, Director	504,383	0.19%
Christiaan F. Staargaard, Director (Independent)	70,000	0.03%
Lorne A. Torhjem- Director (Independent)	359,000	0.14%
<b>Total</b>	<b>15,192,003</b>	<b>5.75%</b>

Institutions / Others	Shares	% of Total
Hudbay Minerals	30,823,849	11.67%
<b>Total</b>	<b>30,823,849</b>	<b>11.67%</b>

<b>Total - Management/ Directors / Institutions</b>	<b>46,015,852</b>	<b>17.43%</b>
---	-------------------	---------------

Source: Management Information Circular / Company

Brief biographies of the management team and board members, as provided by the company, follow:

#### **Luquman Shaheen, P.Eng., M.B.A – President, CEO, and Director**

Mr. Luquman Shaheen is a professional engineer with an MBA and 30 years experience in the mining sector. He has worked to develop mining and mineral projects throughout North America, South America and Europe. Mr. Shaheen has led Panoro Minerals since 2008 and has been a shareholder since 1996. Under his leadership Panoro Minerals has completed over \$700 million in financings including precious metals streaming, joint ventures, asset sales, royalties and public and private offerings of equity. Mr. Shaheen has led the growth of Panoro's resource base from 70 million tonnes to 1.1 billion tonnes and the completion of economic studies identifying over \$1.3 billion in valuation at Panoro's two advanced stage copper projects. Mr. Shaheen has been successful in building strategic partnerships with important industry groups such as Wheaton Precious Metals, Hudbay Minerals, JOGMEC. He has built an important shareholder base of investors from the UK, Switzerland, Canada, the US and Peru.

#### **Shannon Ross, CPA, CA – CFO & Corporate Secretary**

Ms. Ross has over 25 years of accounting and financial management experience in the mining industry. She began her career in public practice, moving to the mining industry initially in internal audit for Cominco Ltd., before moving to the exploration industry. She has served as CFO and Corporate Secretary for several companies including Northern Orion Resources, Canaco Resources Ltd. and Tigray Resources Ltd., among others. Ms. Ross holds a Bachelor of Commerce degree from the University of Alberta.

**Luis Vela – Vice President Exploration, Peru**

Mr. Vela has 30 years of experience in copper porphyries, precious metals, exploration/mining and pre-feasibility studies. Prior to Panoro he worked as Vice President and Exploration Manager for companies such as Trafigura Beheer Group, Andean Gold Ltd, Minera Penoles, Andean American Mining, Minera Aurifera Retamas among others and exercised the consultancy in others. He is familiarized with the geology and mining projects in México, Chile, Bolivia and Perú. Mr Vela is a P.Geo. with studies of magister plan in economic geology in the University of Chile. He is also a Qualified Person associated with the Comisión Minera of Chile.

**Yves Barsimantov – Vice President, Operations & Peru General Manager**

Mr. Barsimantov holds a B.Sc. in Economics. He is a management professional with over 14 years of experience in the Peruvian banking, fishing and mining sectors. Mr. Barsimantov joined Panoro in May 2010 and has been General Manager of Panoro's subsidiary in Peru since January 2011.

**Christian G. Pilon – Executive Director Peru, Director**

Resident in Lima, Peru, Mr. Pilon has over 30 years of experience in applied geophysics in mining, civil engineering, environmental and water resource projects. He is currently president of Geoline S.A., a Peruvian company dedicated to the sales and rental of engineering instrumentation and to specialized geophysical surveys and consulting

**Augusto Baertl– Chairman**

Mr. Baertl is an experienced mining executive with over 50 years of experience in the Peruvian and International Mining sectors. Mr. Baertl's career began with the San Cristobal Mining unit of the Cerro de Pasco Corporation followed by Compañía Minera Milpo where he rose to the role of President & CEO. Mr. Baertl was also President & CEO of Compañía Minera Antamina where he led the \$2.25 billion development of one of the world's largest copper/zinc mines from exploration to start-up. Mr. Baertl is a past member of the Board of Directors of many mining companies including Milpo, Atacocha, Huaron, Chungar, Corporacion Minera Castrovirreyna, Norsemont Mining and Chinalco International in addition to serving on the boards of banking, engineering, construction and contract mining companies in Peru. Mr. Baertl is a former Chairman of the SNMPE, IIMP, Petroperu, the Canada Peru Chamber of Commerce and the Peru Chapter of the Latin American Business Council. Mr. Baertl has recently been appointed as Chairman of the Board of Directors of Graña y Montero, a New York Stock Exchange listed and Peru's largest Engineering and Infrastructure company. He is also currently a member of the Board of Directors of Alturas Minerals, Fima and Stevia One and is active with a number of Non-Governmental Organizations in Peru such as Horizonte Corporativo and Cedro.



**Bill Boden, CPA, CA– Director**

Mr. Boden is a Chartered Accountant with more than 30 years of experience as a manager of risk capital investments. He was founder and President of the CW Funds group of companies, affiliated with Ventures West Management Inc., for which he structured and raised financings totaling \$130 million, primarily from overseas investors. Mr. Boden was a founding director of Landex Petroleum Corp. and a founder of First Coal Corporation for which he served as Chairman and CEO. The two companies were acquired for over \$450 million.

**Ronald Hall – Director**

Mr. Hall holds a BSc. in Metallurgy from Cardiff University in the UK and has over 40 years' experience in the management, operation, evaluation and design of mining projects globally. Over his career he has worked and lived in the UK, South Africa, Botswana, Canada, Australia, China and elsewhere where he has advanced mining projects from early stages through feasibility and into development and operation. From 2004 to 2011, Mr. Hall lead the growth of Wardrop Engineering's mining business in Vancouver, B.C. and internationally, including the establishment of offices in the UK, China, Chile, Brazil, Hong Kong and Australia, prior to the acquisition of Wardrop by TetraTech Inc. Mr. Hall is currently an independent director of Chinalco Mining Corporation International (CMCI), a publicly listed company on the Hong Kong stock exchange, which operates the Toromocho Copper project in Peru.

**Anthony Laub – Director**

Mr. Laub has held a number of senior leadership positions in several companies of the Peruvian energy sector, having been Chief Legal Counsel of Electroperú, Director of Distriluz, SEAL, Electro Sur Este, Empresa de Generación del Centro and Electro Sur Medio, as well as a member of the Special Privatization Committee CEPRI Oroya-Carhuamayo-Paragsha-Antamina Electrical Power Line. He also has experience in the public sector, having served in many positions within the Ministry of Energy and Mines, including Secretary General, Director-General of Legal Counsel, Advisor to the Ministerial Office and Chief of the Ministry of Energy and Mines' General Bureau of Electricity's Legal Department. Mr. Laub graduated from Pontificia Universidad Católica del Perú with a law degree, and has also completed a LL.M. in Energy Law & Policy at the University of Dundee, United Kingdom. He is currently a Senior Partner of Laub & Quijandría -- Consultores y Abogados, the first Peruvian firm specialized in the energy and mining industries. Mr. Laub also has teaching experience, having been a professor in Universidad ESAN's Gas PAE, as well as a professor at the UPC and UPC's Graduate School.

**Christiaan F. Staargaard, M.Sc., P.Geo. – Director**

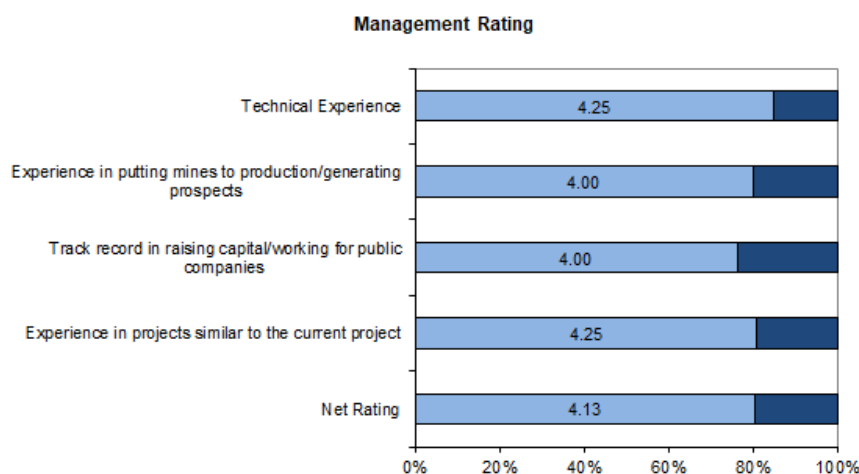
Mr. Staargaard holds a B.Sc. in Geology from The Pennsylvania State University and an M.Sc. in Geochemistry from Queen's University. Initial employment with a number of major and junior mining companies was followed by the development of a successful independent consulting practice. He has served as a director with a

variety of publicly traded companies with advanced, international mineral projects since 1990 and recently left InZinc Mining Ltd. after fourteen years as President and CEO. He has over forty years of experience in all facets of mineral exploration in a wide variety of geological environments throughout North, Central and South America as well as China, the Southwest Pacific, Africa, Europe and Madagascar.

**Lorne Torhjelm – Director**

Mr Torhjelm is currently President of L.C.T. Management Corp., a private real estate and financial investment company. Since 1995, Mr. Torhjelm has worked for numerous public companies, all in the resource sector, holding positions of CEO, President, Director and CFO.

**Our net rating on Panoro’s management team is 4.1 out of 5 (see below).**



Source: FRC

**The company’s board has eight members, of which, six are independent.**

**Strength of Board**

	Poor	Average	Good
Six out of eight directors are independent			X
Directors' share ownership			X
The Audit committee is composed of four board members, all are independent			X
The Compensation committee is composed of three board members, all are independent			X

Source: FRC

Independent board

## Financials

At the end of Q2-2020, the company had cash and a working capital deficit of \$1.52M and \$9.88M, respectively. The deficit was because of \$9.88M in current liabilities, of a total of \$12.61M in liabilities related to the agreement with Wheaton. Wheaton's payments have been recorded as liabilities because, as mentioned earlier, Wheaton has an option to terminate the agreement. We estimate the company had a burn rate (G&A expense and others) of \$113k per month in H1-2020. The following table summarizes the company's liquidity position:

### Financial Position

(in C\$)	FY2019	FY2020 (6M)
Cash	\$470,085	\$1,520,981
Working Capital (adj.)	-\$793,214	\$3,931
Current Ratio	0.08	0.19
Monthly Burn Rate (G&A)	-\$163,779	-\$112,663
Cash spent on Properties	-\$3,068,267	-\$1,482,651
Cash from Financing Activities	\$1,853,538	\$1,000,164

Source: FRC / Company

**Stock Options and Warrants:** The company has 20.25 million options (weighted average exercise price of \$0.24 per share) and nil warrants outstanding. All the options are out-of-the-money.

## Valuation and Rating

The following table compares Panoro's projects and some of the key undeveloped copper projects in the Americas. As shown, Panoro's projects are smaller than the average deposit, but its grades are slightly higher. **As large, high CAPEX projects are currently out of favor, we believe Panoro is a good M&A target for mid-tier producers.**

### Comparable Copper Projects

Project	Company	Country	Avg Copper Grade	Copper Resources (Mlbs)	Cu Annual Production Estimate (Mlbs)	CAPEX (\$M)
Pebble	Northern Dynasty Minerals	USA (Alaska)	0.36%	81,800	678	\$4,695
Twin Metals	Antofagasta PLC	USA (Minnesota)	0.56%	19,900		\$2,775
Rosemont	Hudbay Minerals	USA (Arizona)		5,869	309	\$1,921
Schaft Creek	Copper Fox Metals	Canada	0.25%	9,978	232	\$3,257
Casino	Western Copper and Gold	Canada	0.17%	10,100	245	\$2,456
Harper Creek	Yellowhead Mining Inc.	Canada	0.29%	5,790	128	\$839
Ajax	KGHM	Canada	0.25%	8,821	109	\$1,307
New Prosperity	Taseko Mines Ltd.	Canada	0.24%	10,746	130	
Vizcachitas	Los Andes	Chile	0.37%	17,063	245	\$1,875
Cotabambas	Panoro	Peru	0.33%	5,250	155	\$1,486
Antilla	Panoro	Peru	0.32%	2,706	46	\$250
Average (excl. outliers)			0.32%	8,103	172	\$1,962

Source: FRC / Various

No need for equity financings in the near-future due to funding commitments by partners

Panoro is attractive for mid-tier producers seeking smaller, lower CAPEX projects with robust economics

PML's shares are currently trading at an **Enterprise Value ("EV") to resource ratio of just €0.4 per lb** versus an average of €2.4 for companies with large copper focused projects in the Americas.

*PML shares are trading at just \$0.004/lb vs the comparables' average of \$0.024*

Company	Country	EV/ Resource (\$/lb)
Rambler Metals and Mining PLC (TSXV:RAB)	Canada	\$0.042
Trilogy (TSX: TMQ)	USA (Alaska)	\$0.039
Nevada Copper Corp (TSX:NCU)	USA (Nevada)	\$0.062
Excelsior Mining (TSX:MIN)	USA (Arizona)	\$0.029
Serengeti Resources (TSXV:SIR)	Canada	\$0.019
Los Andes (TSXV: LA)	Chile	\$0.008
Western Copper and Gold (TSX:WRN)	Canada	\$0.010
Northern Dynasty (TSX:NDM)	USA (Alaska)	\$0.006
Panoro Minerals (TSXV: PML)	Peru	\$0.004
<b>Average</b>		<b>\$0.024</b>

100% of M&I + 50% of Inferred  
Source: FRC / Various

Our Discounted Cash Flow valuation on Cotabambas is US\$0.62 per share, and on Antilla is US\$0.52, based on US\$3/lb copper and US\$1,400/oz gold. **Our valuation is highly sensitive to key inputs, as shown below.**

DCF Valuation - Cotabambas			
Mine Life (years)	15		
Throughput (tpd)	80,000		
Total Tonnage (Mt)	420		
	<b>Copper</b>	<b>Gold</b>	
Avg Grade	0.34%	0.19	
Recovery	80%	61%	
Average Annual Production	157,727,584	95,628	
Price (US\$)	\$3	\$1,400	
Initial Capital Cost (US\$, M)	\$1,500		
Operating Cost (US\$/t)	\$11.0		
Tax	27%		
Discount Rate	11.6%		
After-Tax Net Asset Value (US\$), net of Wheaton Precious's Share	\$163,938,639		

AT-NAV per Share (US\$)		Copper Price (US\$ / lb)				
		\$2.50	\$2.75	\$3.00	\$3.25	\$3.50
Discount Rate	5.0%	\$1.10	\$2.02	\$2.94	\$3.86	\$4.78
	10.0%	-\$0.10	\$0.45	\$0.99	\$1.54	\$2.09
	11.6%	-\$0.31	\$0.15	\$0.62	\$1.09	\$1.56
	12.5%	-\$0.40	\$0.07	\$0.46	\$0.89	\$1.32
	15.0%	-\$0.59	-\$0.25	\$0.10	\$0.44	\$0.78

		Copper Price (US\$ / lb)				
		\$2.50	\$2.75	\$3.00	\$3.25	\$3.50
Gold Price (US\$ / oz)	1,200	-\$0.48	-\$0.01	\$0.45	\$0.92	\$1.39
	1,300	-\$0.40	\$0.07	\$0.54	\$1.00	\$1.47
	1,400	-\$0.31	\$0.15	\$0.62	\$1.09	\$1.56
	1,600	-\$0.15	\$0.32	\$0.79	\$1.26	\$1.72
	1,800	\$0.02	\$0.49	\$0.95	\$1.42	\$1.89

DCF Valuation - Antilla		
Mine Life (years)	17	
Throughput (tpd)	20,000	
Total Tonnage (Mt)	119	
Avg Grade	0.43%	
Recovery	75%	
Average Annual Production (lbs)	50,080,518	
Cu Price (US\$/lb)	\$3.00	
Initial Capital Cost (US\$, M)	\$250	
Operating Cost (US\$/t)	\$9.5	
Tax	27%	
Discount Rate	11.6%	
After-Tax Net Asset Value (US\$)	\$138,432,295	

AT-NAV per Share (US\$)		Copper Price (US\$ / lb)				
		\$2.50	\$2.75	\$3.00	\$3.25	\$3.50
Discount Rate	5.0%	\$0.85	\$1.16	\$1.46	\$1.77	\$2.08
	10.0%	\$0.32	\$0.50	\$0.68	\$0.86	\$1.03
	11.6%	\$0.22	\$0.37	\$0.52	\$0.68	\$0.83
	12.5%	\$0.18	\$0.32	\$0.46	\$0.59	\$0.73
	15.0%	\$0.08	\$0.19	\$0.30	\$0.41	\$0.52

Source: FRC

**We are initiating coverage on PML with a BUY rating, and a fair value estimate of \$0.77 per share.** For conservatism, we have discounted our valuations on Cotabambas and Antilla by 50% (as our models are highly sensitive to commodity prices), and have not accounted for any upside from the company's other projects.

Valuation Summary (C\$)		
Cotabambas (discounted by 50%)	\$108,199,502	\$0.41
Antilla (discounted by 50%)	\$91,365,315	\$0.35
Other Assets	-	-
Working Capital, net of Debt (incl. PV of remaining payments from Hudbay and Mintania)	\$3,254,187	\$0.01
<b>Fair Value (C\$)</b>	<b>\$202,819,004</b>	<b>\$0.77</b>

Source: FRC

## Risks

We believe the company is exposed to the following key risks (not exhaustive):

- Larger projects tend to have high CAPEX.
- As porphyry projects are of relatively low-grade, they are highly sensitive to commodity prices.
- Wheaton Precious has an option to terminate the financing agreement.
- Project financing on Antilla may take longer than expected.
- Development, EIA, and permitting risks.

As with most junior exploration / development companies, we rate Panoro's shares a risk of 5 (Highly Speculative).

**Fundamental Research Corp. Equity Rating Scale:**

**Buy** – Annual expected rate of return exceeds 12% or the expected return is commensurate with risk

**Hold** – Annual expected rate of return is between 5% and 12%

**Sell** – Annual expected rate of return is below 5% or the expected return is not commensurate with risk

**Suspended or Rating N/A**— Coverage and ratings suspended until more information can be obtained from the company regarding recent events.

**Fundamental Research Corp. Risk Rating Scale:**

**1 (Low Risk)** - The company operates in an industry where it has a strong position (for example a monopoly, high market share etc.) or operates in a regulated industry. The future outlook is stable or positive for the industry. The company generates positive free cash flow and has a history of profitability. The capital structure is conservative with little or no debt.

**2 (Below Average Risk)** - The company operates in an industry where the fundamentals and outlook are positive. The industry and company are relatively less sensitive to systematic risk than companies with a Risk Rating of 3. The company has a history of profitability and has demonstrated its ability to generate positive free cash flows (though current free cash flow may be negative due to capital investment). The company's capital structure is conservative with little to modest use of debt.

**3 (Average Risk)** - The company operates in an industry that has average sensitivity to systematic risk. The industry may be cyclical. Profits and cash flow are sensitive to economic factors although the company has demonstrated its ability to generate positive earnings and cash flow. Debt use is in line with industry averages, and coverage ratios are sufficient.

**4 (Speculative)** - The company has little or no history of generating earnings or cash flow. Debt use is higher. These companies may be in start-up mode or in a turnaround situation. These companies should be considered speculative.

**5 (Highly Speculative)** - The company has no history of generating earnings or cash flow. They may operate in a new industry with new, and unproven products. Products may be at the development stage, testing, or seeking regulatory approval. These companies may run into liquidity issues and may rely on external funding. These stocks are considered highly speculative.

**Disclaimers and Disclosure**

The opinions expressed in this report are the true opinions of the analyst about this company and industry. Any "forward looking statements" are our best estimates and opinions based upon information that is publicly available and that we believe to be correct, but we have not independently verified with respect to truth or correctness. There is no guarantee that our forecasts will materialize. Actual results will likely vary. The analyst and Fundamental Research Corp. "FRC" does not own any shares of the subject company, does not make a market or offer shares for sale of the subject company, and does not have any investment banking business with the subject company. Fees were paid by Panoro to FRC. The purpose of the fee is to subsidize the high costs of research and monitoring. FRC takes steps to ensure independence including setting fees in advance and utilizing analysts who must abide by CFA Institute Code of Ethics and Standards of Professional Conduct. Additionally, analysts may not trade in any security under coverage. Our full editorial control of all research, timing of release of the reports, and release of liability for negative reports are protected contractually. To further ensure independence, Panoro has agreed to a minimum coverage term including an initial report and three updates. Coverage cannot be unilaterally terminated. Distribution procedure: our reports are distributed first to our web-based subscribers on the date shown on this report then made available to delayed access users through various other channels for a limited time.

The distribution of FRC's ratings are as follows: BUY (68%), HOLD (7%), SELL / SUSPEND (25%).

To subscribe for real-time access to research, visit <https://www.researchfrc.com/website/subscribe/> for subscription options.

This report contains "forward looking" statements. Forward-looking statements regarding the Company and/or stock's performance inherently involve risks and uncertainties that could cause actual results to differ from such forward-looking statements. Factors that would cause or contribute to such differences include, but are not limited to, continued acceptance of the Company's products/services in the marketplace; acceptance in the marketplace of the Company's new product lines/services; competitive factors; new product/service introductions by others; technological changes; dependence on suppliers; systematic market risks and other risks discussed in the Company's periodic report filings, including interim reports, annual reports, and annual information forms filed with the various securities regulators. By making these forward-looking statements, Fundamental Research Corp. and the analyst/author of this report undertakes no obligation to update these statements for revisions or changes after the date of this report. A report initiating coverage will most often be updated quarterly while a report issuing a rating may have no further or less frequent updates because the subject company is likely to be in earlier stages where nothing material may occur quarter to quarter. Fundamental Research Corp DOES NOT MAKE ANY WARRANTIES, EXPRESSED OR IMPLIED, AS TO RESULTS TO BE OBTAINED FROM USING THIS INFORMATION AND MAKES NO EXPRESS OR IMPLIED WARRANTIES OR FITNESS FOR A PARTICULAR USE. ANYONE USING THIS REPORT ASSUMES FULL RESPONSIBILITY FOR WHATEVER RESULTS THEY OBTAIN FROM WHATEVER USE THE INFORMATION WAS PUT TO. ALWAYS TALK TO YOUR FINANCIAL ADVISOR BEFORE YOU INVEST. WHETHER A STOCK SHOULD BE INCLUDED IN A PORTFOLIO DEPENDS ON ONE'S RISK TOLERANCE, OBJECTIVES, SITUATION, RETURN ON OTHER ASSETS, ETC. ONLY YOUR INVESTMENT ADVISOR WHO KNOWS YOUR UNIQUE CIRCUMSTANCES CAN MAKE A PROPER RECOMMENDATION AS TO THE MERIT OF ANY PARTICULAR SECURITY FOR INCLUSION IN YOUR PORTFOLIO. This REPORT is solely for informative purposes and is not a solicitation or an offer to buy or sell any security. It is not intended as being a complete description of the company, industry, securities or developments referred to in the material. Any forecasts contained in this report were independently prepared unless otherwise stated and HAVE NOT BEEN endorsed by the Management of the company which is the subject of this report. Additional information is available upon request. THIS REPORT IS COPYRIGHT. YOU MAY NOT REDISTRIBUTE THIS REPORT WITHOUT OUR PERMISSION. Please give proper credit, including citing Fundamental Research Corp and/or the analyst, when quoting information from this report.

The information contained in this report is intended to be viewed only in jurisdictions where it may be legally viewed and is not intended for use by any person or entity in any jurisdiction where such use would be contrary to local regulations or which would require any registration requirement within such jurisdiction.