



Know when to hold-em!  
 Know when to fold-em!  
 Know where to set stops!  
 Know when to run!  
 Never count your portfolio  
 Until the sells are done..

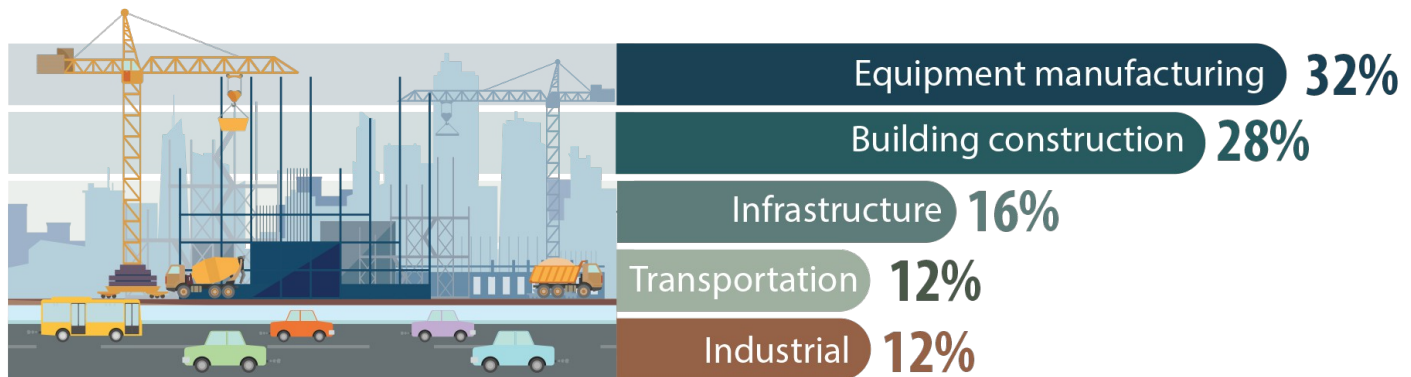
[rhstruthers@gmail.com](mailto:rhstruthers@gmail.com)

Ron Struthers Substack

[Monthly subscription US\\$19.99](#)

## Doctor Copper

For a long time copper has been described with a PhD in economics. It is tied so much to all industries that it's demand cycles can mirror economic cycles.



As most of the world seeks to reach net-zero targets and transition to cleaner, renewable forms of energy, copper is a big requirement. However, the amount of copper needed to successfully facilitate the energy transition is staggering. Nearly 70% of all copper produced is used in electrical applications, which is why it's so important to the energy transition.

While the average internal combustion engine vehicle contains approximately 48 pounds of copper, a typical EV contains [nearly four times that amount](#). Solar Technology uses about 5.5 tons copper/MW of electricity and wind about 4 tons/MW onshore and 10 tons/MW offshore.

[Jerome Leroy, vice-president](#) of the Canadian business unit of cable supplier Nexans, worries that [copper](#) mines won't be able to keep up. This concern partly stems from the fact it takes many years to secure regulatory approvals for new mines. Moreover, ore grades at existing mines have long been in decline. (Production is concentrated in Chile, Peru and China.) Mr. Leroy points to forecasts suggesting production capacity will grow to 27 million tonnes a year by the end of this decade, whereas demand could rise as high as 35 million tonnes. A shortfall could materialize as soon as next year, he warns.

*"I start to see it happening at the power utility level," he said. "People are requesting more and more cable. The likes of BC Hydro and Hydro-Québec, and others, say that probably they will need at least 5-per-cent more cable every year starting from now."*

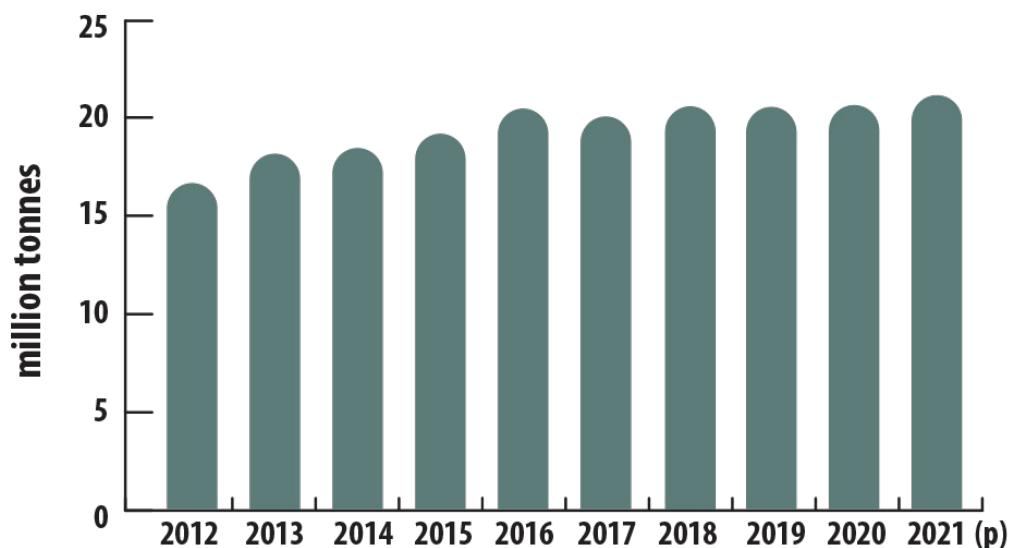
Blair DeBruyne, the director of operations, inventory and fleet services at SaskPower, points out that copper is a major ingredient in transformer coils and almost every power line. But he's worried about all mined materials because order lead times are being pushed out.

Last year, IHS Markit (a market research firm owned by S&P Global) projected that copper demand could double in little more than a decade – from 25 million tonnes today to 50 million by 2035.

*“The chronic gap between worldwide copper supply and demand projected to begin in the middle of this decade will have serious consequences across the global economy,”* an IHS report warned, *“and will affect the timing of net-zero emissions by 2050.”*

Demand for copper in energy transition applications is expected to climb about 8.2% over the next decade, outstripping a projected 2.9% increase in copper demand in that period for traditional uses such as construction, infrastructure, machinery, and transportation, said Mohsen Bonakdarpour, executive director of economics & country risk for Market Intelligence.

**My take - I am not as bullish as many on the speed to electrification and EVs, but if demand even grows at half of the projections, there will be shortages.** You see, the problem is really on the supply side, mainly because years of under investment in mining. The chart below on copper production shows that growth has been flat since 2016.



The global copper industry needs to spend more than \$100 billion to build mines able to close what could be an annual supply deficit of 4.7 million tonnes by 2030, Erik Heimlich, head of base metals supply at CRU said in 2022.

The supply gap for the next decade is estimated at six million tonnes per year, as the clean energy and electric vehicles sectors ramp up. This means the world would **need to build eight projects the size of BHP's (ASX: BHP) Escondida in Chile, the world's largest copper mine**, over the next eight years. Such task, Heimlich said, seems questionable?

*“Many of the projects currently developed have been in the making for almost three decades, and*

with exploration activity relatively limited in recent years, supply increases may fade from 2025,” experts at BoA said.

| Project                           | Country          | Majority Owner            | Development Status              | Geology                    | Contained Copper (mt) |
|-----------------------------------|------------------|---------------------------|---------------------------------|----------------------------|-----------------------|
| 1. Pebble                         | United States    | Northern Dynasty Minerals | Preliminary Economic Assessment | Porphyry, Supergene Copper | 37.18                 |
| 2. Resolution                     | United States    | Rio Tinto                 | Feasibility                     | Porphyry                   | 27.27                 |
| 3. La Granja                      | Peru             | Rio Tinto                 | Advanced Exploration            | Porphyry                   | 22.06                 |
| 4. Kerr-Sulphurets-Mitchell (KSM) | Canada           | Seabridge Gold            | Prefeasibility                  | Porphyry, Skarn            | 21.25                 |
| 5. Nueva Union                    | Chile            | Teck Resources/Newmont    | Prefeasibility                  | Porphyry                   | 16.69                 |
| 6. Tampakan                       | Philippines      | Sagittarius               | Feasibility                     | Porphyry                   | 15.25                 |
| 7. El Pachon                      | Argentina        | Glencore                  | Advanced Exploration            | Porphyry                   | 15.04                 |
| 8. Los Azules                     | Argentina        | McEwen Mining             | Preliminary Economic Assessment | Porphyry, Supergene Copper | 13.42                 |
| 9. Twin Metals Minnesota          | United States    | Antofagasta               | Prefeasibility                  | Magmatic Sulfide           | 12.96                 |
| 10. Frieda River                  | Papua New Guinea | Guangdong Rising          | Feasibility                     | Epithermal, Porphyry       | 12.45                 |

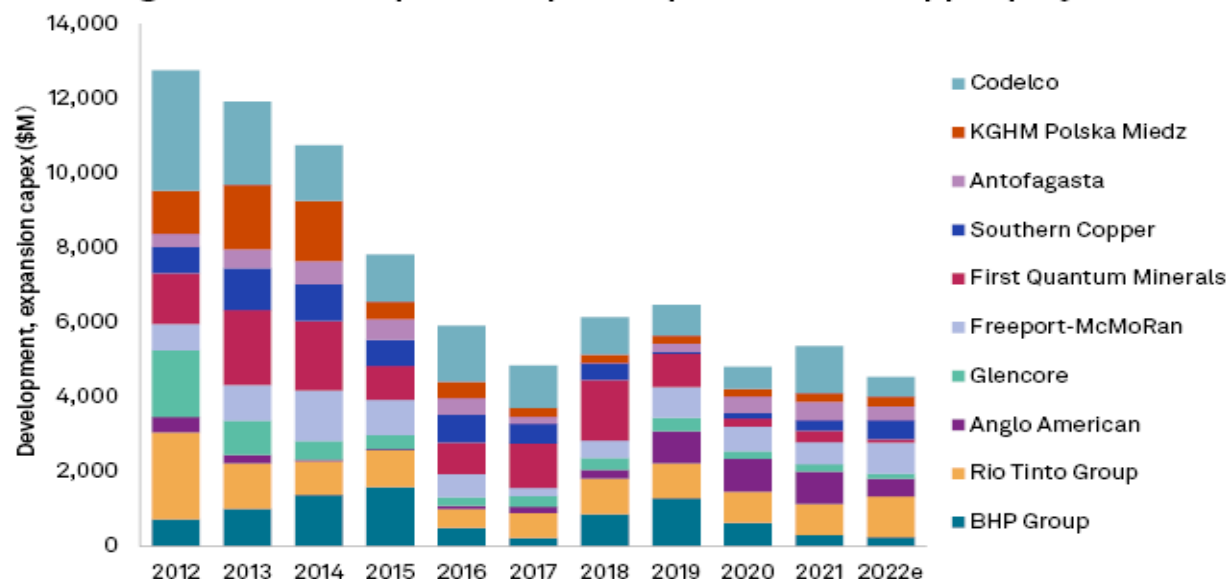
Note: Pebble and KSM are also ranked top 10 for gold

Source: Miningintelligence



Global development and expansion capital for primary copper mines peaked in 2013 at \$26.13 billion, almost halved in subsequent years and has not recovered since. Capital spend on copper projects is estimated to have been only \$14.42 billion in 2022, based on Mine Economics' universe of coverage. A further decrease of 18.7% is projected for 2023. This chart is just the top 10 companies.

10 leading miners development capital expenditure on copper projects



As of March 15, 2023.

e = estimate.

Source: S&P Global Market Intelligence.

© 2023 S&P Global.



Mine expansion activities rose in 2021, with some major announcements in Chile, Indonesia and Mongolia that will add 3 million tonnes (mt) over the next four years. **Most miners continue to allocate a major portion of budget to expansion of existing mines**, while gross root share was 34% in 2021. Over the last decade, there have been 19 major gross root discoveries but only three in the past five years, adding just 5.6mt to the total production. Latin America (LatAm) remains the top region in terms of total discoveries; however, over the past decade, new supplies have come more from Africa and Asia. In particular, between 2012 and 2021, around 56% of the top 10 discovered deposits were added by the Kamo-a-Kakula deposit in the Democratic Republic of the Congo in 2014 and the Onto deposit in Indonesia in 2013.

## **Catch 22 - the climate activists want to electrify and go green but don't want new copper mines – Dah!!!!!!!**

The changes in LatAm royalty taxes add to the regulatory uncertainty prevailing in the region. The Chilean government is considering a modified version of a 2021 bill to impose a 1% sales tax for copper companies producing less than 200 kilotonnes per annum (ktpa) and up to 3% for companies with output exceeding 200ktpa. However, the companies producing under 50ktpa are exempted from this tax. Similarly, tax changes and local community protests in Peru have impacted production from major mines in the region. This is likely to impact new project pipeline over the coming years.

Freshwater usage is another major concern for copper mines, especially in Chile, Peru and the southwest United States. [Peru has been rocked by protests](#) since former President Pedro Castillo was ousted in December 2022 in an impeachment trial. The South American nation accounts for 10% of the global copper supply.

**Shares in First Quantum have dropped a whopping 2/3rds (66%)** since opposition to a mining contract on their massive copper mine went viral in Panama. The mine is about 1/2 their copper production, so the stock might be getting over sold. Let's see where it bottoms.



Aerial views of the protests in Panama City over the expansion of the Cobre Panama mine. (Stock

Their contract deal, gave the company the right to mine the site for at least the next two decades in exchange for \$375 million US a year to the government. It has become have a flashpoint for local protesters. That opposition has escalated into broader anti-government protests that officials say are costing Panama \$80 million US a day.

The mine faces legal and constitutional challenges from the country's top court, and citizens may get a chance to vote on the contract extension in a referendum next month. Because of the blockade, Quantum [announced November 23<sup>rd</sup>](#) that they suspended production at the mine.

## Conclusion

There is no way that supply will ramp up enough to meet rising demand, even if demand increases are half of what is expected. Bringing new mines on stream is becoming more difficult with regulation and climate activists. The major mining companies are mostly focused on expanding and improving profits at their existing mines. The two main results **are higher copper prices, that will likely go to new highs and a huge focus on junior copper explorers**. Not by investors **yet**, but the majors who are watching these like hawks and will be jumping on discoveries and promising projects.

First, a long term chart on copper. Prices have not gone crazy but the 2011 highs were tested in 2021 and 2022. Since then a wedge pattern has developed. A breakout will occur and I would bet to the upside.



Next chart, short term on the next page, the recent move up and then back was a test of resistance and support levels.

There are virtually no pure copper producer plays but perhaps one and the big copper producers also produce other base metals so are no where near a pure copper investment. One option is the junior copper explorers and I will highlight three of my favourites before I touch on the best pure producer play.



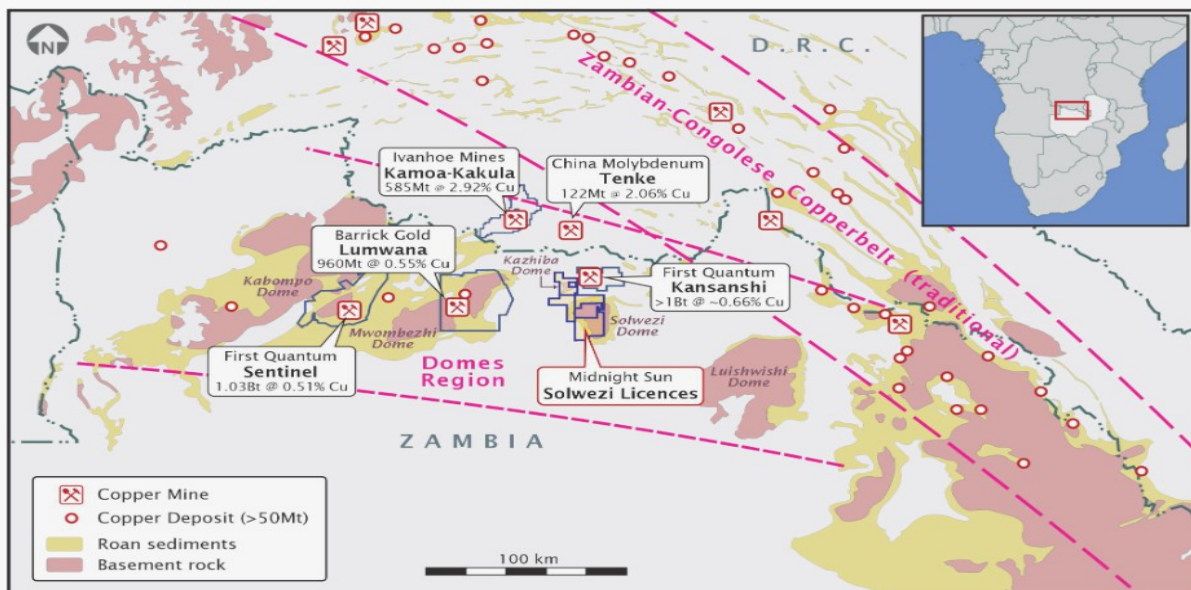
## Midnight Sun TSXV:MMA

Recent Price \$0.20

Midnight Sun has done a lot of exploration work on their Solwezi mineral exploration licenses in Zambia that are located directly adjacent to the largest copper mine in Africa – Once again, First Quantum Minerals' Kansanshi copper/gold mine. Midnight Sun has a copper discovery there and needs further work to prove up.

With Midnight Sun it is all about location. The Zambian-Congo copper belt is host to some of the world's richest mines, with operators that include Barrick, Rio Tinto, Glencore, Ivanhoe Mines, and First Quantum and a lot of them surround MMA.

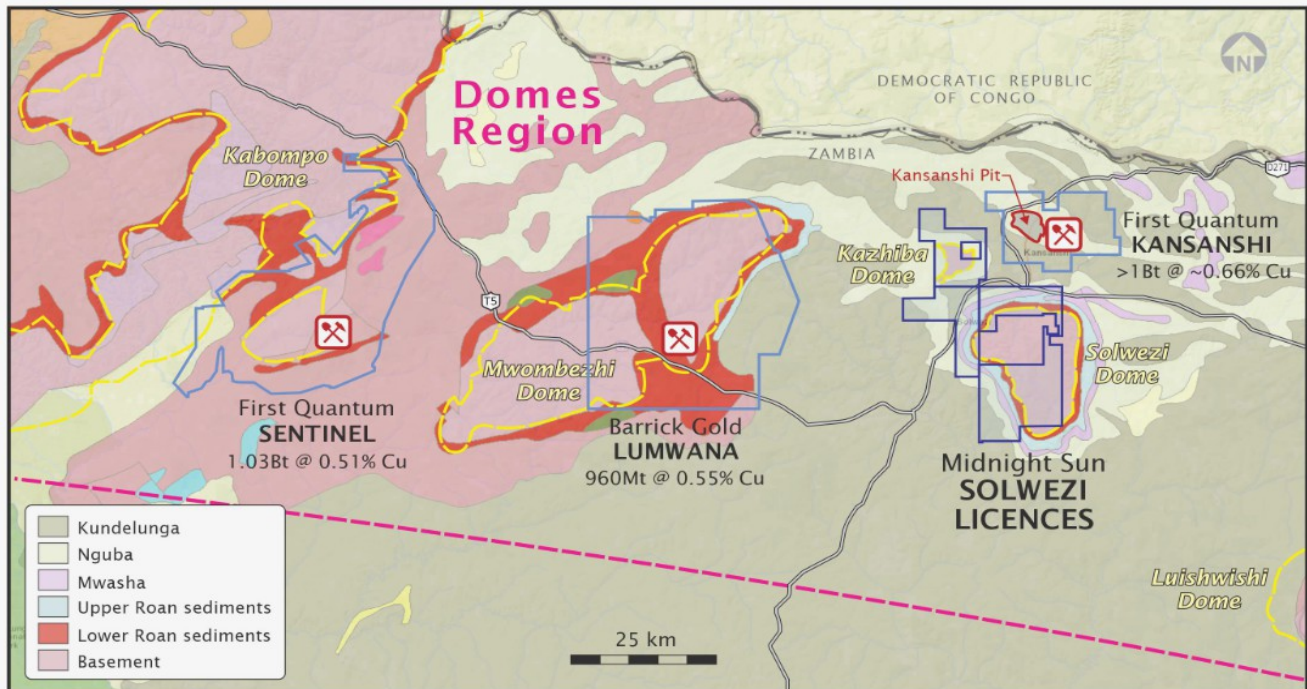
## Located In The Heart Of The Zambian-Congo Copper Belt





This graphic shows a better closeup

## Surrounded By World-Class Producers and Operators



MMA has four main targets named Dumbwa, Kazhibi Dome, Mitu Trend and Crunch Zone.

**Dumbwa** is a continuous high-grade copper-in-soil anomaly for over 20 km along strike and about 1 km wide with peak values up to 0.728% copper.

**Kazhibi Dome** has multiple high grade hits in the 22 zone with the discovery hole running 11.3 meters grading 5.71% copper. Other intercepts include 21 meters of 3.26% copper and 6.4 meters of 5.08% copper.

**The Mitu Trend** shows similar style mineralization as the Sentinel Mine with associated cobalt and nickel. Drill hits include 11.6 meters of 3.44% copper and 11.5 meters of 1.41% copper.

**The Crunch Zone** has a newly identified structural target with a largely untested VTEM conductive anomaly. It occurs on the same stratigraphy as First Quantum's Kansashi Mine.

MMA has a large 506 sq km property and already has two high grade discoveries. They are in the right place and have caught the attention of the major miners. I expect we will see some type of JV deal on one or more of their target areas and/or some more great results in the next drill program.

They have 118 million shares out and at \$0.20 the market cap is just around C\$24 million, quite cheap for their location and discovery. The company is run by CEO, Al Fabbro who I have known many years and made good returns on his last deal RoxGold.

The stock bottomed in 2022 with the correction in copper prices. Since then it recovered but has been stuck in a range between \$0.20 and \$0.32. It is a good buy here at the bottom of this range.



**Zonte Metals TSXV:ZON**

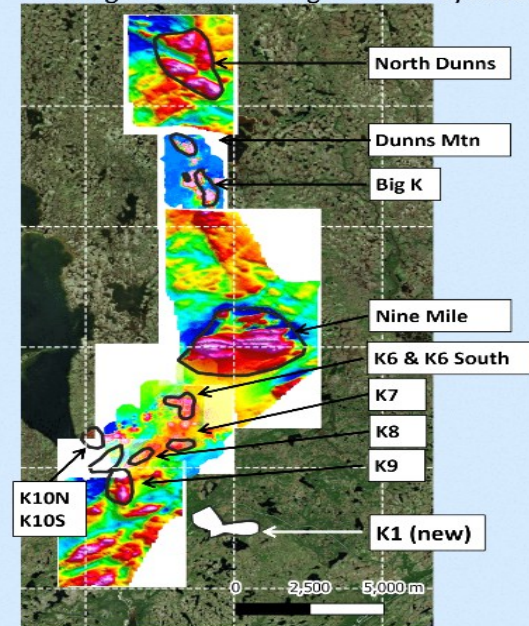
**Recent Price \$0.08**

Zonte is in a great location as well, miner friendly NFLD Canada. Year around road access, high voltage power at the one end of the property and near tide water at the other end. There has been a gold rush there with Newfound Gold's high grade discovery at their Queensway project. There has not been much copper exploration although NFLD was the world's 4th largest copper producer back in the WW2 era. However, I think this will soon change as Zonte has discovered a grass roots new copper district, an Iron Oxide Copper Gold (IOCG) system. These can produce huge mines and Zonte has done a lot of tedious work over the past several years and has discovered 12 priority targets so far. I expect multiple mines could be discovered.

**Cross Hills: 12 targets discovered to date**



Image shows the magnetic surveys over the project with targets circled in dashed lines.



The project covers a large IOCG system. IOCG systems are known for their potential size such as Olympic Dam.

12 targets discovered to date with the potential to discover more.

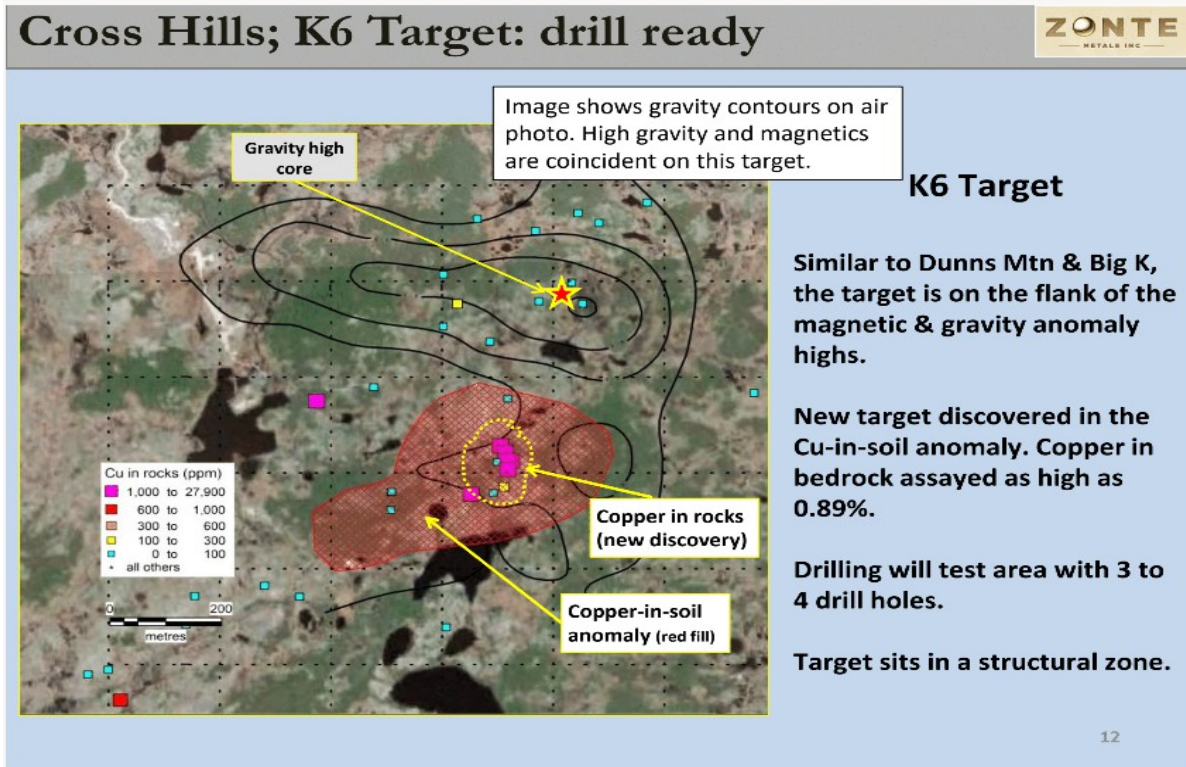
Targets are large; in the 1000 x 500m size with two on the order of 3000 x 3000m.

A discovery within one of these targets points to a new copper district in Canada.



Zonte did some drilling, testing magnetic and gravity highs and from this learned that potential deposits are likely adjacent to these anomaly highs. Their soil sampling and rock sampling in the last two years appears to confirm this. They did make one high grade hit at their Dunns Mountain target, but it was narrow. It was 0.43 meters with 14% copper, 15 g/t gold and 352 g/t silver.

With their new exploration approach, they are currently drilling the K6 target. In the graphic you can see that the copper soil anomaly sits adjacent to the gravity and magnetic highs. It is also proven with copper in rocks. Zonte has drilled 4 holes there so far and I expect results in the New Year.



The stock just bottomed at historic lows in October, but needs to break the down trend channel. There is only mild resistance around 8 cents with stronger resistance around \$0.13

I did an 18 minute interview with CEO Terry Christopher and we went over in detail, the exploration on the K6 target. It is [well worth watching at this youtube link](#).

Zonte also has a gold project in the Yukon that is adjacent to Victoria Gold's mine. Victoria Gold has been advancing a 2<sup>nd</sup> discovery there and has been conducting sampling and drilling right up to Zonte's property boundary. I have little doubt that it extends onto Zonte's property. Zonte also had a drill discovery on this property in 2015 that is on trend. Zonte has about 70 M shares outstanding and at current prices has a market cap of just over \$5 million.

## Element 29 TSXV:ECU

Recent Price - \$0.15

Element 29 is advancing two new, high-quality copper projects in Peru - Flor de Cobre & Elida - each with excellent potential for resource growth and development. They have 100% ownership in these projects and are at a favourable lower elevation < 2,700 meters and with good infrastructure.

**OUR PROJECTS**

**ELIDA**

**A large porphyry copper deposit cluster in central Peru, located at low elevation and close to infrastructure.**

In 2022, the Company completed an Initial Mineral Resource Estimate<sup>1</sup> outlining an Inferred Mineral Resource of 321.7 million tonnes grading 0.32% copper (for a total of 2.24 billion pounds of contained copper), plus 0.029% molybdenum and 2.6 g/t silver with a low 0.74:1 strip ratio (at 0.20% copper cut-off grade) on the Zone 1 porphyry.

A Phase 2 drill program was undertaken in Q4-2022 to test the expansion potential of the Zone 1 Mineral Resource Estimate and test additional targets.

**FLOR DE COBRE**

**An under-explored porphyry copper deposit within the Southern Peru Copper Belt.**

The Flor de Cobre property includes the Candelaria zone, a well-known copper project identified in the 1930's and the site of an historical small-scale mining operation, and the highly prospective Atravesado zone.

At Candelaria in 2022, the Company successfully completed a 4,500 metre, 12-hole drilling program that confirmed data from an historical resource estimate associated with a near-surface supergene enrichment blanket and primary copper sulphide mineralization beneath the enrichment blanket to depths of over 500 metres.

At Atravesado, the Company is advancing permitting for initial drilling of a large porphyry target supported by coincident outcrop geology, surface geochemistry, and geophysical responses. Atravesado is located approximately 1.5 kilometres northwest of Candelaria and is a 1.5 km x 2.5 km elliptical zone characterized by outcropping copper oxide mineralization, strong copper geochemistry, quartz vein stockworks, potassic alteration, and late-mineral porphyry dikes.

**ELEMENT 29 RESOURCES**

PERU

Lima

ELIDA

FLOR DE COBRE

ECU's Elida project is in an advanced stage but things have been quiet with the company. However, they just closed a \$2.8 million financing in the middle of September so I expect they will soon announce a new exploration and drill program.

ECU has 106 M shares outstanding so at \$0.16 has a market cap of about \$16 million.

## **Conclusion**

All 3 of these junior explorers are ripe for either a JV deal or buyout from a major. Of the 3 juniors Zonte is the cheapest with a market cap of \$5 million compared to \$16M (ECU) and \$24M (MMA ) of the other two and has an active drill program, so an additional catalysts to move the stock. I suggest owning all three stocks with a focus first on Zonte, if you don't own any because they will have drill results in early 2024. For a copper producer, I think the best play is:

**Capstone Copper TSX:CS**                      **Recent Price - \$6.05**  
**52 week trading range \$4.40 to \$7.25**                      **Shares outstanding, 695 million**

Capstone is a pure copper producer with 4 producing mines, one in Arizona, one in Mexico and two in Chile. And 97% of it's revenues are derived from copper sales. An expansion of their Mantoverde Mine in Chile is going to significantly increase copper production in 2024 and lower costs. Here are the operating results of the four mines in Q3 2023. All operations performed a bit lower in Q3 and are temporary in nature.

### **Pinto Valley mine, Arizona USA**

Copper production of 13,600 tonnes in Q3 2023 was 3 per cent lower than in Q3 2022, mainly on lower mill throughput during the quarter (Q3 2023 -- 47,426 tonnes per day (tpd) versus Q3 2022 -- 48,143 tpd), resulting from unplanned eight-day downtime related to the secondary crusher jack shaft replacement and counter shaft repairs. Grade was consistent quarter-over-quarter (Q3 2023 -- 0.34 per cent versus Q3 2022 -- 0.34 per cent). Recoveries were lower compared with the same period last year (Q3 2023 -- 87.4 per cent versus Q3 2022 -- 89.1 per cent).

### **Mantos Blancos mine, Chile**

Q3 2023 production was 12,200 tonnes, composed of 9,100 tonnes from sulphide operations and 3,000 tonnes of cathode from oxide operations, 11 per cent lower than the 13,600 tonnes produced in Q3 2022. The lower production was driven primarily by lower dump throughput, grade and recoveries impacting cathode production. The mill throughput of 14,176 tpd in Q3 2023 was impacted by mill downtime caused by planned repair and maintenance of the concentrator plant that lasted six days (liners and major components change). Recoveries were lower in Q3 2023 compared with the same period last year (76.3 per cent in Q3 2023 versus 79.3 per cent in Q3 2022), mainly driven by ore characteristics in the upper areas of the mine. A plan to address the plant stability during the second half of 2023 is under way that includes improved maintenance and optimization of the concentrator and the tailings system.

### **Cozamin mine, Mexico**

Q3 2023 copper production of 5,900 tonnes was lower than the same period prior year, mainly on lower mill throughput (3,567 tpd in Q3 2023 versus 3,829 tpd in Q3 2022). Recoveries and grades were consistent quarter-over-quarter.



## Mantoverde mine, Chile

Q3 2023 copper production of 8,600 tonnes was 26 per cent lower compared with 11,600 tonnes in Q3 2022. Heap operations grade was lower as a result of mine sequence (0.32 per cent in Q3 2023 versus 0.45 per cent in Q3 2022), and recoveries were lower (66.5 per cent in Q3 2023 versus 86.7 per cent in Q3 2022) due to lower solubility ratio of the processed mineral and lower grades, all of which was partially offset by higher heap throughput (2.7 million tonnes in Q3 2023 versus 2.5 million tonnes in Q3 2022). Throughput from dump operations was lower compared with the same period last year due to a temporary sulphuric acid supply shortfall in September, and grades were consistent with the same period last year.

## MVDP Construction Nearing Completion

### Key Milestones in Q3 2023

- ~**5.0Mt** of **sulphide ore** stockpiled as at September 30, 2023.
- Commenced **commissioning** of the **primary crusher**.
- Critical equipment assembly progressing on schedule: **SAG/Ball mills**' lubrication and cooling systems installed and first rotation performed.
- Mass excavation at the **tailings storage facility** was completed; starting wall and cut-off trench nearing completion.

### Project Update

- **MVDP remains on schedule** with construction completion to occur by **year-end 2023**, followed by an expected **6-month ramp-up** to nameplate capacity.
- Updated MVDP total capital cost estimate of **\$870M**, from \$825M due to:
  - (1) **inflationary impacts** largely driven by higher diesel prices on pre-stripping and tailings earthworks;
  - (2) **project improvements** to include additional rotainers, a water reservoir, and additional camp and warehouse infrastructure; and
  - (3) Additional forecast **ramp-up** and **commissioning costs**.



Mantoverde Development Project Site Overview, October 2023.

**For a virtual tour of MVDP, please visit:**

<https://vrify.com/decks/12698-mantoverde-development-project>

Mantoverde development project overall progress at 93 per cent and remains on schedule. Construction is progressing well on all key areas of the project. Total project spend since inception was \$763-million at the end of September, 2023, compared with \$706-million at June, 2023. The project is on target for construction completion by year-end 2023. As the project nears completion, the updated total project cost is estimated at \$870-million, which is a 5-per-cent increase and includes approximately \$20-million in project improvements.

## Financial

Total available liquidity of \$424.5-million as at Sept. 30, 2023, composed of \$129.5-million of cash and short-term investments, and \$295-million of undrawn amounts on the corporate revolving credit facility. Capstone is in strong financial shape to get the Mantoverde on stream and from that revenues and cash flows will see significant increases.

## Conclusion

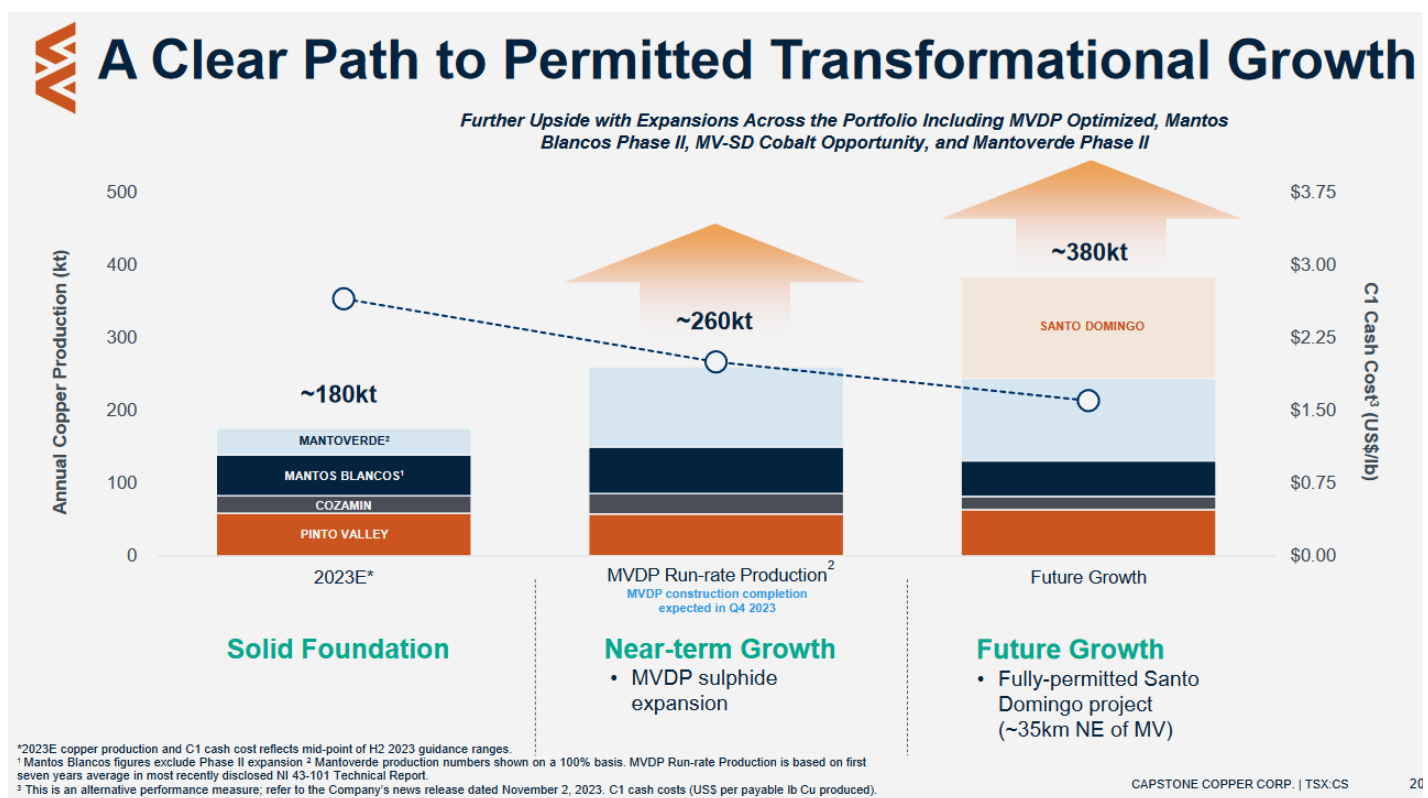
Q3 2023 copper production totalled 40,300 tonnes at C1 cash costs of \$2.88 per payable pound of copper produced. Copper production in the third quarter was impacted by an unplanned eight days of cumulative downtime at Pinto Valley related to the secondary crusher jack shaft replacement and

counter shaft repairs, plus planned maintenance downtime at Mantos Blancos. Lower production levels and maintenance expenses were the key drivers related to higher consolidated cash costs in the quarter.

The company reaffirms its H2 copper production guidance of 83,000 tonnes to 93,000 t. C1 cash costs are trending toward the upper end of the H2 guidance range of \$2.55/lb to \$2.75/lb due to additional unplanned maintenance expenditures noted above.

John MacKenzie, CEO of Capstone, commented in the Q3 results: *"I am encouraged by the progress we made during the third quarter in executing on our plan to improve operational reliability and expand margins across our portfolio. As construction at our flagship Mantoverde development project (MVDP) approaches completion by year-end, we look forward to a transformational year in 2024. Our excitement follows many years of dedicated effort by our mine build team in Chile. MVDP will drive a significant reduction in our consolidated unit costs and provide a pathway to record operating cash flow generation for Capstone Copper."*

This graphic is from their presentation and highlights the strong growth in 2024 with the MVDP ramp up. Future growth is expected with their Santo Domingo project in Chile. It is an IOCG system with a targeted 200,000 tonnes per year of low cost copper with cobalt. An updated feasibility is planned for 2024.



With Capstone, you get the leverage to copper prices and exposure to strong production growth. The stock dipped with the over all market weakness in September/October and has recovered. The drop in the stock in 2022 was when copper prices had some substantial weakness, see copper charts, page 5.



The stock has strong resistance above \$7.00 and will probably take higher copper prices or when their increased production and revenue comes on stream in 2024. The stock has saw a very good rally and I would look for some weakness or pull back to around \$5.50 to buy.

*All forecasts and recommendations are based on opinion. Markets change direction with consensus beliefs, which may change at any time and without notice. The author/publisher of this publication has taken every precaution to provide the most accurate information possible. The information & data were obtained from sources believed to be reliable, but because the information & data source are beyond the author's control, no representation or guarantee is made that it is complete or accurate. The reader accepts information on the condition that errors or omissions shall not be made the basis for any claim, demand or cause for action. Because of the ever-changing nature of information & statistics the author/publisher strongly encourages the reader to communicate directly with the company and/or with their personal investment adviser to obtain up to date information. Past results are not necessarily indicative of future results. Any statements non-factual in nature constitute only current opinions, which are subject to change. The author/publisher may or may not have a position in the securities and/or options relating thereto, & may make purchases and/or sales of these securities relating thereto from time to time in the open market or otherwise. Neither the information, nor opinions expressed, shall be construed as a solicitation to buy or sell any stock, futures or options contract mentioned herein. The author/publisher of this letter is not a qualified financial adviser & is not acting as such in this publication.*