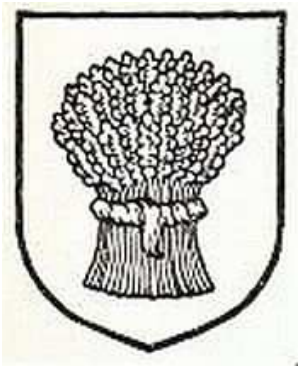
Tuesday, August 11, 2020



# HALLGARTEN & COMPANY

**Initiation of Coverage**

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# Alphamin Resources

## (TSX: AFM, OTC:AFMJF, JSE:APH)

## Strategy: LONG

| | |
|---|---|
| Price (CAD) | $0.210 |
| 12-Month Target Price (CAD) | $0.48 |
| Upside to Target | 129% |
| High-low (12 mth) | $0.12 - $0.27 |
| Market Cap (CAD mn) | 247.8 |
| Shares O/S (millions) | **1,180.0** |
| Fully Diluted (millions) | **1,260.0** |

| | FY19 | FY20e | FY21e | FY22e |
|---|---|---|---|---|
| Consensus EPS | | n/a | n/a | n/a |
| Hallgarten EPS (CAD) | | $0.02 | $0.04 | $0.05 |
| Actual EPS (CAD) | 0.01 | | | |
| P/E | 26.3 | 9.9 | 4.8 | 4.0 |

# Alphamin Resources

## New Tin Major in the Making

- + Alphamin is the newest producer of size to be added to the Tin-mining scene
- + Bisie in the DRC is one of the highest grade tin mines in operation
- + Tin prices are on the rise, after a strong dip in March, and recently broke through their 12-month highs
- + Commercial production was declared in September 2019, but shortly after a bridge collapsed stymied deliveries, but stocks were cleared in 1Q20 and normalization of production occurred in 2Q20
- + Tin was classified by the US as a strategic metal, in 2018, but the US has no reserves, either in or out of the ground
- + Recent financing significantly cleaned up the liability side of the balance sheet and reduced debt burden
- ✘ The Virus Crisis has confused the demand picture while causing shutdowns on the supply side
- ✘ The DRC is still perceived in some circles as being politically difficult and unstable
- ✘ The principal listing is in Canada which is a market that has never really grasped tin dynamics

**New Kid on the Block**

It is surprising to see a TSXV-listed entity working with a speciality metal get a jump on other players (in the ASX for example) but that is exactly what Alphamin appears to have achieved. The secret though would appear to be that the company is South African-run rather than led by the same old Vancouver promoters who tend to talk much and achieve little.

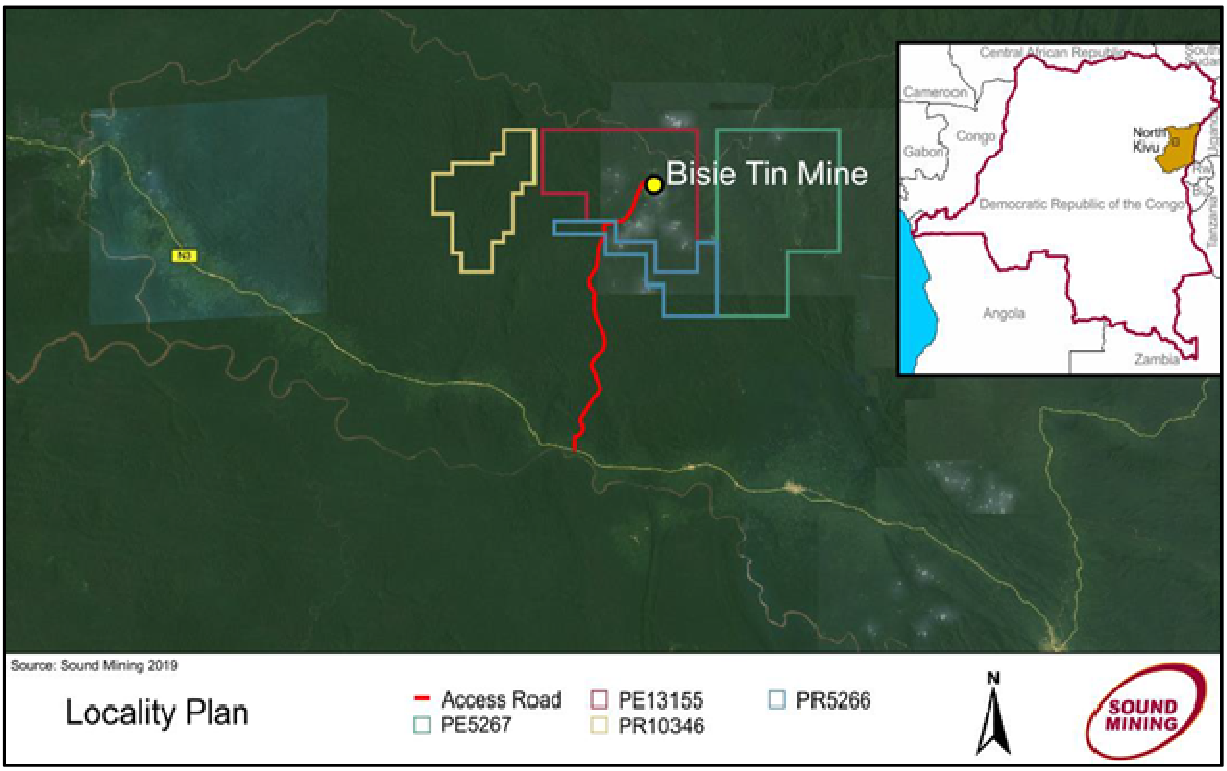
The Bisie mine is a key new addition to the world tin feedstocks market, with a potential capacity of producing 13,000 tpa of payable tin. Its mine in the DRC has been long in the development process and not without travails in getting to production, including the project being in a warzone earlier in the decade. But with the stabilization of the political situation the project managed to move forward and reach commercial production in September 2019. Much credit has to go to its backers Tremont Master Holdings which maintained (and upped) its support during the long period where equity markets did not care for tin projects.

However, after a dive during the worst of the Virus's effects on markets, the Tin price has been moving back up and the prospects for firmer prices look good. Roskill is expecting a tight outlook for tin feedstocks over the coming decade, although the market should be sufficiently supplied if key projects ramp-up as forecast. Many of these are dependent upon a tin price north of US$20,000 per tonne.

In this note, we shall review the background and progress of Alphamin and its recent move to a positive bottom line.

**Bisie**

The company's main asset is the Bisie Tin mine in the DRC. It is located roughly 140 km west-northwest of the regional centre of Goma and about 40km from the Ugandan border. There is novel mineralisation at Bisie, which includes high-grade Tin, Copper, Zinc, Lead and Rare Earths.




Bisie consists of not only Mpama North but also Mpama South, both located in the Walikale district, 180km west-north-west of the regional centre of Goma. The company's 84.14% subsidiary, Alphamin Bisie Mining SA holds 100% ownership over five exploration permits which cover 1,470 $km^2$ of prospective ground in the North Kivu Province.

Tin was first discovered at Bisie in 2004 and was mined by artisanal miners (down to 80 metres) from two main target areas, Mpama North and Mpama South Both targets are located along 1.5 km of a ridge which extends over more than 9 kms. Artisanal mining from Bisie in the past has dominated the DRC's production by supplying up to 70% of the cassiterite exported from the country.

Mpama North was a large centre of artisanal mining in the past, with extensive surface and rudimentary artisanal shafts located on the prospect, much like Mpama South originally.

*Source: Alphamin*

The photo above shows the artisanal miners who worked the surface expressions at Mpama North.

**Geology**

The Bisie Mine area is underlain by Kibaran Orogenic Belt lithologies, interpreted as being an inter-cratonic collision zone with different periods of extension and compression. The two units present at the mine are the lower Paleoproterozoic basement comprising Rusizian and Ante-Rusizian units composed mainly of dolomites, quartzites, amphibolites, mica schists and migmatite gneisses, as well as the upper Mesoproterozoic unit composed of dominant micaceous schists to red arenaceous phyllites.

The mineralisation is associated with a steeply dipping (~65° east) north-south striking zone of intense chloritisation and shearing contained within micaceous schists. The main tin bearing chloritised zone is on average approximately 9m thick. Narrower subordinate zones occur several metres above and below the main zone in certain areas. The mineralisation occurs in the form of irregular high-grade veins of botryoidal cassiterite several tens of centimetres thick and lesser amounts of cassiterite blebs and vein fragments irregularly disseminated in the chlorite schist. The strength differential between lithologies often results in boudinage cassiterite lenses.


Botryoidal Cassiterite in drill core

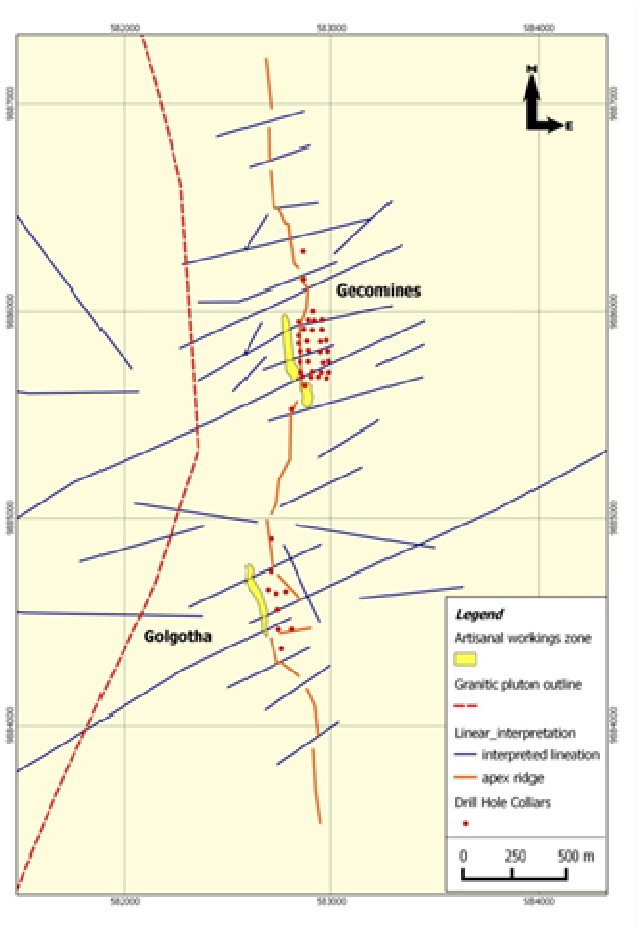
The mineralised zone plunges approximately 35° to the north, although local steeper plunging high grade trends are evident. Copper, lead and zinc occur as chalcopyrite, galena and sphalerite in locally significant concentrations, together with silver. Two zones of mineralisation have been discovered at Bisie; these are known as Mpama North and Mpama South, which occurs about 750m to the south of Mpama North.

**Exploration**

Alphamin completed its first 2,400m drilling program between June and December 2012 to test the true width and grades of tin mineralisation at both target areas. A second drill program was completed in August 2013 which focused on resource drilling at the Mpama North prospect, with a further 28 holes drilled for 3809m. The program showed that cassiterite was emplaced in massive veins ranging in thickness from 2mm to 0.64m, generally within high grade chutes with an apparent shallow plunge to the north.

The better tin intercepts from the initial program included:

- 25.85m @ 2.26% Sn from 47.65m,
- including 5.8m @ 8.55% Sn
- 12m @ 3.15% Sn from 53m & 3m @ 6.14% Sn from 80m
- 18.5m @ 2.21% Sn from 53m including 2.9m @ 6.27% Sn
- 11m @ 1.48% Sn from 71m including 2.5m @ 5.76% Sn




The second drilling program intercepted a second, deeper zone with exceptionally high grades:

- 29m @ 3.3% Sn from 165m including 11m @ 6.06% Sn
- 17m @ 6.78% Sn from 185m including 4.35m @ 18.62% Sn
- 15m @ 7.94% Sn from 171m & 7.65m @ 9.40% Sn from 192m
- 17m @ 3.27% Sn from 133m

Tin mineralisation is better developed at s Mpama North with thicker and more numerous cassiterite veins and substantial copper mineralisation in parts. Mpama South has less cassiterite and veins are normally thinner, however the lead and zinc mineralisation is more prevalent, likely due to the presence of the massive pyrite unit. However, by any measures these drill results display great grades, as most other projects are touting 1% grades as their best readings. The company is targeting what it believes is a resource of >500,000 tonnes of tin metal at this site.

In recent days, Alphamin has appointed T3 Drilling SARL, a drilling contractor, to undertake a 6,000 metre diamond core drilling program at its Mpama South prospect, commencing in Q3 2020. Mpama South is located approximately one kilometre south of the main processing plant at Bisie and the drilling program has been designed to delineate a maiden Mineral Resource at Mpama South.

Between 2012 and 2013, Alphamin drilled 19 drill holes for 3,364 metres to determine the extent and nature of the mineralization at Mpama South. Two distinct mineralized zones were intercepted, an upper zone showing well-developed lead, zinc and silver mineralization, and a lower zone rich in tin and copper.

The team has already identified a number of areas along the Bisie Ridge showing soil geochemistry anomalies similar to those found at Mpama North. Management expects to generate a further 3-5 drill targets from these anomalies over the next 18 months.

Historical drilling results from Mpama South and the work planned to begin now will form the basis for a maiden Mineral Resource at Mpama South and allow for possible extension to the life of operations at Bisie.

Additionally, plans are being developed for deep level drilling at the Mpama North orebody, which is currently open at depth.

**Resource**

In late November 2013 the company announced a maiden Inferred Mineral Resource at the Mpama North target. The Inferred Resource was defined over 400m strike to a depth of 220m and is open at depth

The Mpama North Target Inferred Mineral Resource currently comprises four million tonnes @ 3.5% Sn for 141,200 tonnes of contained tin (at 0.25% Sn cut-off). Drilling was conducted on a grid of approximately 50m x 50m down to depths of 220m. The best results were reported from the four deepest holes drilled to date.

A previous NI43-101 Technical Report, in March 2017, presented the Feasibility Study results.

A new resource prepared by Sound Mining is dated 31st of December 2019. This resource estimate was focused on Mpama North.

**Mpama North Resource**

| Category | Ore mn tonnes | Sn % | Contained Tin | Cu % | Zn % | Pb (ppm) | Ag g/t |
|---|---|---|---|---|---|---|---|
| **Measured** | 0.33 | 4.75 | 15,600 | 0.22 | 0.12 | 0.006 | 1.4 |
| **Indicated** | 3.99 | 4.59 | 183,400 | 0.32 | 0.16 | 0.01 | 2.8 |
| **Measured & Indicated** | 4.32 | 4.61 | 199,000 | 0.31 | 0.15 | 0.01 | 2.7 |
| **Inferred** | 0.48 | 4.57 | 21,800 | 0.16 | 0.09 | 0.013 | 1.4 |

It should be noted that the December monthly YTD forecast reports that 172,000 tonnes of ore have already been processed at a grade of 5.3% Sn.

The Mineral Reserve for Mpama North was also updated in 2019 to account for these depletions together with the outcome of a new mining method, and to cater for a lowering of the depth from where it was believed the artisanal miners had impacted the Mineral Resource. These adjustments reduced the Mineral Reserves as stated in the March 2017 Technical Report by approximately 34,000 tonnes Sn.

Mpama North Reserve

| Classification | Ore mn tonnes | | Sn Grade % | | Contained Tin (tonnes) | |
|---|---|---|---|---|---|---|
| | 2019 | 2017 | 2019 | 2017 | 2019 | 2017 |
| Proven | 0.05 | 0.38 | 3.77 | 4.17 | 1,890 | 15,900 |
| Probable | 3.28 | 4.29 | 4.01 | 3.53 | 131,490 | 151,400 |
| Total Reserves | 3.33 | 4.67 | 4.01 | 3.58 | 133,380 | 167,300 |

**The Mined Deposit**

The ore body dips at approximately 60° to 65° to the east and strikes close to north-south. The mineralised zone plunges approximately 25° towards the north. The Mpama North orebody comprises a sheeted set of cassiterite veins, 2mm to 1.8m thick, over a true width of 5m to 15m which form a tabular body striking north-south for 570m and dipping 50° to 65° to the east. The veins are hosted within an intensely chlorite altered amphibolite schist, approximately the same width as the orebody.

The Mineral Resource of Mpama North was estimated for the portion of the deposit that is deeper than approximately 75m to exclude shallow areas that have been depleted by artisanal mining. It extends approximately 700m in the down plunge direction and to a depth of approximately 550mbs as dictated by the availability of the exploration drilling data. The mineralisation is open in a northerly plunging direction and for a limited extent to the south. The strike of the payable zone ranges from 490m in the shallow areas to 150m in the deeper areas of the mine. The deposit remains open at depth.

The Main Vein zone of the deposit, which accounts for approximately 97.5% of the Mineral Resource (by tin content), is on average approximately 9m thick. It narrows (~2m) at the margins and can be up to 20m thick in the central, and generally higher grade, area. The zones that occur several metres above and below the main zone are generally considerably narrower than the Main Vein zone and cover areas of between 100m and 200m in the dip and strike directions.

**Offtaker**

The trading house, Gerald Group, is the sole offtaker of the Bisie mine's industrial production of tin concentrate. Gerald has a five-year extendable contract with Alphamin Bisie Mining SA, in which the Gerald has a holding of 3.8% of the common stock. The contract has termination clauses notably on a

change of control. Combined with Gerald's other tin off-takes, the Bisie output makes Gerald the pre-eminent trader of African tin concentrates.

**Staged Development**

The development of the Bisie mine has been planned to be staged, with the first of those stages now complete. The remaining stages will be self-funded. This strategy was adopted to reduce the capex required to an achievable amount, and to avoid flooding the tin market with excess material. Consultations with the primary industry players indicate that a production of 10,000tpa to 15,000tpa would be absorbed by the market without adversely affecting the price.

The parameters for the first stage were 40,000m of drilling to achieve a minimum of 150,000t contained tin, a mining and plant processing rate to produce approximately 10,000tpa contained tin. These defined the current mine and processing plant.

Further stages will include additional drilling at Mpama North, below the extent of the current drilling to extend the life of mine of Mpama North. Additional circuits in the processing plant should increase recoveries, with drilling and development of Mpama South adding capacity and life of mine. These moves will be followed by further regional exploration on already identified targets and other prospective areas.

Gravity recovery plant

**Capacity & Start-Up**

The process plant was designed to treat up to 420,000 tpa of ore (at 4% Sn) to produce ~20,000 tpa of 62% tin concentrate with 72% recoveries, or 12-13,000 tonnes of contained tin per annum. Employment numbers are around 800 employees.

Plant construction was completed during Q2 2019 and overall processing recoveries increased significantly post quarter-end due to improved equipment availabilities, operator upskilling and consistency of feed material to the plant. Tin losses in the circuit were identified and process flow changes made to reduce the losses of tin to the fine and ultrafine flow streams. As a result, the system achieved an overall recovery of 65% during the month of August 2019 (compared to design levels of ~72%). The company declared commercial production in September, so results started to flow to the top line of the earnings statement during 3Q19.

Crushed ore stockpile above jigs, gravity building to the upper left

**Operations**

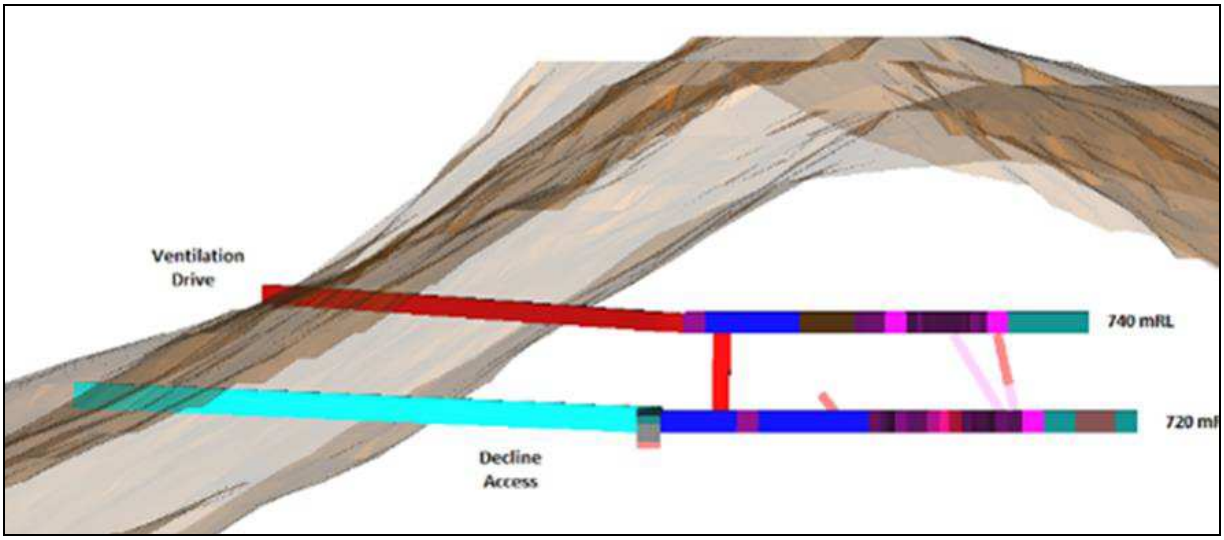
The Definitive Feasibility Study of 2016 considered a number of possibilities before trading off sub-level caving (SLC) and cut and fill (C&F). SLC was initially selected but changed to C&F based on what was being encountered early-on underground. When blasts created a fissure that intersected structures connected to the artisanal workings above, a rush of water and clay was experienced posing a serious safety hazard if SLC was used. In addition, explosives were fragmenting the waste rock far finer than the

tin-bearing ore, which was regularly seen as large blocks. These blocks posed a high risk of hanging up in the cave, with no means to pry them loose which would stop ore from flowing down to the draw points.

The ore body was seen to be pinch and swell to a far greater degree than the drilling indicated stressing the ability of the caving parameters to follow it, which would result in ore loss or higher than planned dilution. For these reasons Alphamin fell back on a C&F method whilst the additional data was processed and a new mining method developed to cater for this.

One of the drawbacks though was that the C&F mining method is expensive, limits operating flexibility and is unlikely to generate the required plant throughput at steady state on its own. The company instead implemented a mining method that uses open stope drilling and blasting methods to excavate the ore before backfilling the open stopes with waste rock. It is noted that open stoping with cemented hydraulic fill or paste fill was considered as one of the mining methods during the initial mining method selection process. The latest mining plan is to use waste rock as the fill rather than cemented hydraulic or paste fill.

The current access to the underground workings consists of two adits as illustrated in the schematic diagram that follows (with the primary air duct being the vertical red marking):

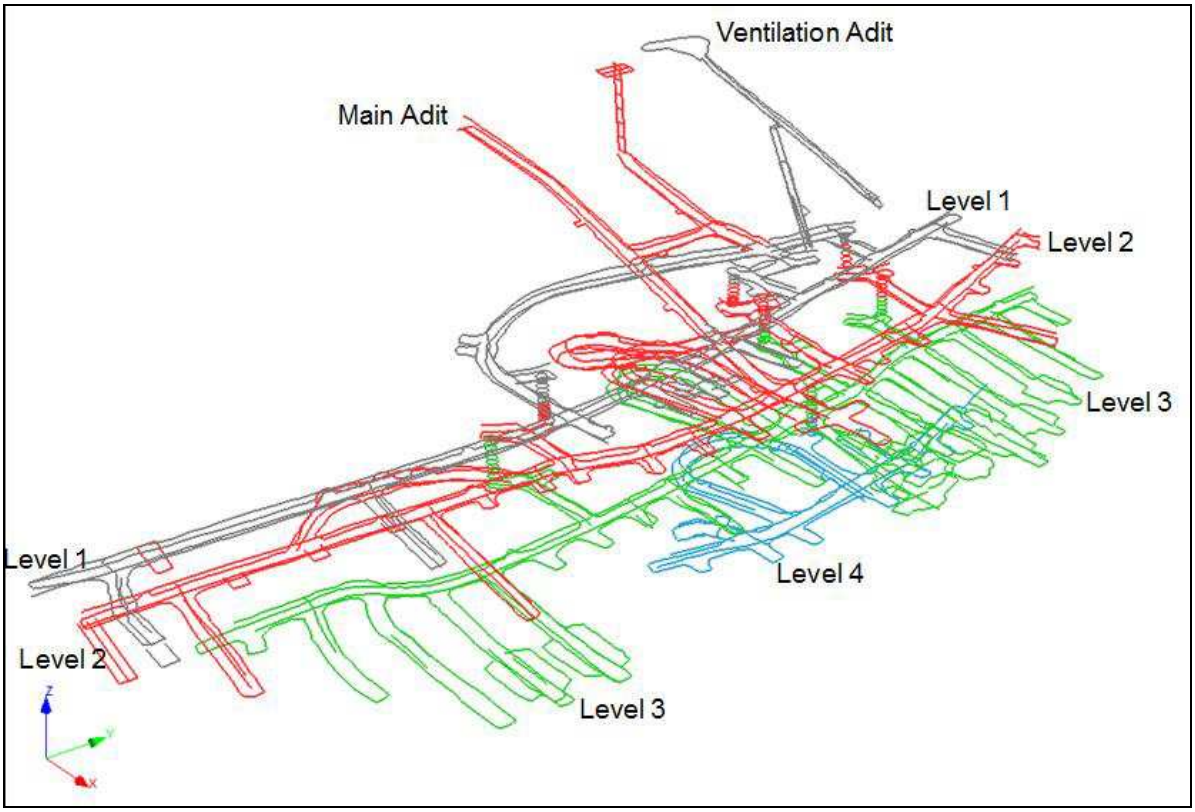



The one adit is developed for ventilation purposes (return air) while the other adit provides access for men, material, equipment and fresh intake air. The only other underground workings consist of various abandoned artisanal workings which are expected to extend to maximum depth of 75m below surface.

The underground development consists of the decline ramp located in the footwall which will advance to the central position on each level where the footwall drives are started. The connection from the decline ramp to the footwall drives extends to the orebody from where the Ore drives are developed parallel to the footwall drives.

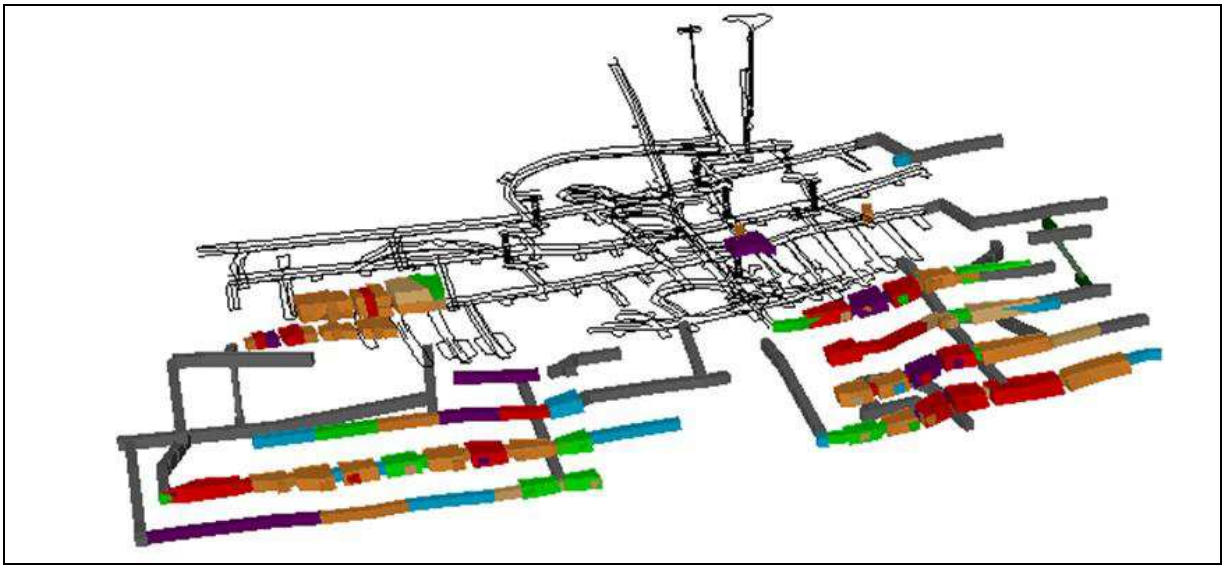
Footwall drives intersecting the main decline

Future planned development carries on from the current development layout, as shown in the cut-away that follows:




The ore drives are located along the footwall contact of the orebody. These footwall and Ore drives extend to the limits of the orebody. Connections between the footwall and Ore drives are developed as

and when required. This incremental development (or at least the next stages of it) is shown in colour on the cut-away that follows:



**Bridge Issue**

Access is everything to an isolated mine site and an accident in 4Q19 has had knock on effects which are still evident in the 1Q20 results. On 30th of October 2019, a major bridge collapsed some 53km south-east of Kisangani in Tshopo, DRC. The collapse occurred along the main provincial road used for exporting all concentrate and importing all major consumables.

It was reported that the bridge could be repaired within eight weeks. The result was though that while the mine kept producing the product could not exit the country. Therefore, the bulk of Q4 production didn't leave to market until Q1 with distortive financial effect on the results for the two quarters.

**Production**

Alphamin began commissioning Bisie in 2019 and tin production has continued to increase during the year, with output rising to 2,350 tonnes for the quarter ending September 2019, compared to 0.6k tonnes for the prior quarter. Plant recoveries averaged 65% in August and September, against design recoveries of 72%. Tin production was forecast to total 2,000-2200 tonnes for the December 2019 quarter, although this figure may be affected by any delays to the import of consumables for the operation.

In 1Q20 the total contained tin production of 2,119 tons was at the mid-point of management's previous market guidance. The commissioning of two new remote controlled LHDs (load, haul, dump machines) during February 2020 improved underground loading capacity and this together with the impact of the recently announced new mining method resulted in a 19% increase in run-of-mine material processed. Tin grades are variable depending on where mining is taking place and tapered off to 3.5% Sn during Q1 2020, in line with expectations. Underground grades were expected to average 4% Sn during 2Q20. The overall plant recovery of 71% was in line with target and 11% above the previous quarter.

Payable tin sales in 1Q20 exceeded production as the on-mine concentrate stockpile was reduced during the months of February and March 2020 following the repair of the collapsed bridge on the main access highway which was opened to traffic on 25 January 2020.

The production for 2Q20 was contained tin production of 2,700 tons based upon run-of-mine tin grades planned at 4% Sn and overall plant recoveries at 72%.

**Next Investments**

The next priority, now that production is nearing nameplate capacity, is the installation of a Fine Tin Recovery component. Alphamin has appointed Obsideo (Pty) Ltd as its engineering, procurement and construction management (EPCM) contractor for the execution of its Fine Tin Project (FTP). The FTP is focused on treating the tailings stream from its gravity concentration plant at Bisie to recover the fine to ultra-fine tin particles.

Management believes that it can increase plant throughput by another 10% through minor plant de-bottlenecking activities – this could increase annual tin production to ~12,000 tonnes. Additionally, in its efforts to maximise metallurgical recoveries, the team has identified process flow streams that contain fine, recoverable tin, and they have selected a proven metallurgical technology to recover the fine tin from these streams, which should increase tin output further at very low incremental operating costs.

The FTP will utilise Multi Gravity Separators (MGS), which have a proven track record in the tin industry to recover particles down to 10um in size, low energy requirements and make high upgrade ratios achievable. The MGS will be set-up in rougher-cleaner configuration, to treat a 20 ton per hour process flow stream from the current plant's tailings running at a grade of 0.8-1.1% tin. The FTP is estimated to produce a concentrate containing 45-55% tin which will be blended with the concentrates from the main gravity concentration plant to produce a final concentrate, estimated to contain 60% tin.

The FTP has the potential to increase production at Bisie by 400 – 800 tonnes of payable tin per annum. With higher production at a low incremental cost, the FTP is expected to further decrease all-in sustaining costs.

The projected timeline for the FTP execution from approval to achieving nameplate capacity is 11-months. Orders for the long lead items have already been placed and the total project expenditure is estimated at US$4.6mn.

**Recent Earnings**

The table that follows shows the recent earnings of Alphamin. There are a few key points to understand with regard to the recent quarters. Firstly, while production began earlier in 2019, the "commercial production" as defined by Exchange rules was not declared until September of 2019 therefore the 3Q19 results only include one month from that quarter. The second thing to note is that because of the aforementioned bridge collapse, inventory could not be moved out to markets, thus it built up at the mine site (this suppressed 4Q19 revenues) but then with product flowing again in the volumes/ revenues (and their associated production costs, amortization and stock movement costs) were built into 1Q20 numbers.

The bridge failure resulted in higher costs in 4Q19 while GS&A was carried on a lower revenue base which damaged margins. 1Q20 saw the slide in tin prices in February and March due to the onset of the Virus Crisis. The nadir of the tin price was in early March at around US$14,000 per tonne.

The result of these two setbacks was a loss of US$5mn in 4Q19 and a slightly ameliorated loss of only $3.2mn in 1Q20. These issues are now in the past.

Therefore, 2Q20 was the first "normal" quarter for Alphamin. The results for this quarter were released in early July. Tin production increased 29% to a quarterly record 2,739 tons and was higher than previous market guidance due to better than expected tin feed grades. Plant throughput increased 8% to 91,928 tons from higher underground volumes derived from the new mining method. During the quarter, mined volumes exceeded plant throughput by some 4,000 tons increasing the run-of-mine stockpiles.

More encouraging even than the higher tin volumes was the improvement in the all-in sustaining cost per ton of payable tin sold, which was reduced by 13% to US$10,849 per ton. This was mainly attributable to increased tin production. Additionally, the previous quarter's costs were negatively affected by high arsenic penalties and the aforementioned exceptional logistical costs incurred while the damaged bridge was under repair. In 2Q20 the EBITDA was $12.9mn.

**Earnings Outlook**

The company is within 10% of its current installed capacity throughput and targeted plant recoveries. The company has said that it expects contained tin production of between 2,600 and 2,800 tons for the quarter ending September 2020. Thus, improvements in margins and results will be the result of higher throughput lowering AISC, greater efficiencies and higher tin prices. The second quarter results showed all three but the real improvement in tin prices will be truly evident in 3Q20 and then the topline revenues will show the strongest improvement.

## Alphamin

FY ended December

| USD mns | FY22e | FY21e | FY20e | 4Q20e | 3Q20e | 2Q20 | 1Q20 | FY19 | 4Q20 | 3Q19 | 2Q19 | 1Q19 | FY18 | FY17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | 246.38 | 229.08 | 199.45 | 50.33 | 48.95 | 40.14 | 60.03 | 27.22 | 19.80 | 7.43 | | | | |
| Cost of Revenue, Total | 105.18 | 103.01 | 113.75 | 22.63 | 22.63 | 23.67 | 44.83 | 15.66 | 9.78 | 5.88 | | | | |
| Gross Profit | 141.21 | 126.06 | 85.70 | 27.70 | 26.33 | 16.47 | 15.20 | 11.56 | 10.01 | 1.55 | - | - | - | - |
| Selling/General/Admin. Expenses | 19.20 | 18.80 | 18.97 | 4.65 | 4.60 | 5.13 | 4.59 | 15.59 | 6.31 | 3.33 | 3.75 | 2.20 | 9.46 | 6.43 |
| Depreciation/Amortisation | 25.00 | 25.00 | 30.05 | 6.25 | 6.25 | 6.25 | 11.30 | | | | | | | |
| Interest Expense (Income) | 5.20 | 7.80 | 13.14 | 2.30 | 2.30 | 3.31 | 5.23 | 5.46 | 3.95 | 1.51 | (0.00) | (0.00) | (0.00) | - |
| Forex loss (Gain) | 0.35 | 0.35 | (0.42) | 0.15 | (0.10) | (0.18) | (0.29) | 0.00 | 0.05 | | (0.00) | (0.04) | (0.01) | (0.48) |
| Warrants | 0.50 | 1.20 | (0.92) | 0.40 | 0.25 | (0.02) | (1.55) | (6.85) | (3.30) | (3.27) | 0.71 | (1.00) | (6.78) | (2.29) |
| Total Operating Expense | 155.43 | 156.16 | 174.57 | 36.38 | 35.93 | 38.16 | 64.11 | 29.85 | 22.67 | 1.58 | 4.45 | 1.15 | 2.67 | 3.66 |
| Operating Income | 90.96 | 72.91 | 24.88 | 13.95 | 13.03 | 1.98 | (4.08) | (2.63) | (2.88) | (0.03) | (4.45) | (1.15) | (2.67) | (3.66) |
| Loss (Gain) on Sale of Assets | | | | | | | | | | | | - | 0.50 | 0.00 |
| Withholding taxes | | | | | | | | | | | | | - | 0.34 |
| Income Before Tax | 90.96 | 72.91 | 24.88 | 13.95 | 13.03 | 1.98 | (4.08) | (2.63) | (2.88) | (0.03) | (4.45) | (1.15) | (3.18) | (4.00) |
| Income Tax | 20.92 | 16.77 | 3.17 | 1.30 | 0.85 | 0.42 | 0.60 | 0.30 | 0.23 | 0.07 | | | - | - |
| Deferred Tax | 4.60 | 5.30 | 0.81 | 0.70 | 0.55 | 0.30 | (0.75) | (8.06) | | | | | | |
| Income After Tax | 65.44 | 50.84 | 20.90 | 11.95 | 11.63 | 1.26 | (3.93) | 5.12 | (3.11) | (0.10) | (4.45) | (1.15) | (3.18) | (4.00) |
| Minorities | 10.47 | 8.13 | 3.48 | 1.91 | 1.86 | 0.45 | (0.75) | 0.15 | 1.88 | (0.60) | (0.72) | (0.42) | (1.81) | (1.26) |
| Income pertaining to Shareholders | 54.97 | 42.71 | 17.43 | 10.04 | 9.77 | 0.81 | (3.18) | 4.98 | (4.99) | 0.50 | (3.73) | (0.74) | (1.37) | (2.74) |
| | | | | | | | | | | | | | | |
| Weighted Average Shares | 1260.00 | 1220.00 | 1101.51 | 1180.00 | 1180.00 | 1180.00 | 866.03 | 866.03 | 866.03 | 866.03 | 866.03 | 786.23 | 786.23 | 467.41 |
| EPS (USD | 0.044 | 0.035 | 0.016 | 0.009 | 0.008 | 0.001 | -0.004 | 0.006 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 |
| EPS (CAD) | 0.052 | 0.044 | 0.021 | | | | | 0.008 | | | | | | |
| | | | | | | | | | | | | | | |
| Tin production - tonnes | 12,700 | 12,250 | 10,358 | 2,750 | 2,750 | 2,739 | 2,119 | 5,216 | 2,235 | 2,345 | 636 | | | |
| Tin sales | 12,100 | 12,000 | 11,649 | 3,050 | 2,700 | 2,613 | 3,286 | 1,109 | 1,109 | | | | | |
| Tin Price (Hallgarten estimate) | $19,400 | $18,700 | $16,690 | $18,300 | $17,800 | $15,359 | $15,300 | | | | | | | |
| | | | | | | | | | | | | | | |
| EBITDA (US$) | 121.16 | 105.71 | 68.06 | 22.50 | 21.58 | 12.90 | 12.45 | | | | | | | |
| Free Cashflow (US$) | 79.44 | 62.54 | 44.65 | 16.05 | 15.73 | 6.51 | 6.37 | | | | | | | |
| Sweep of Free Cashflow | 19.86 | 31.27 | 15.89 | 8.03 | 7.86 | | | | | | | | | |
| | | | | | | | | | | | | | | |
| USD/CAD rate: | 1.20 | 1.25 | 1.34 | | | | | | | | | | | |

We are making quite conservative projections for the tin price in Q3 and Q4 and these have already been exceeded. Even suppressing the price projections, the company is projected to produce a positive bottom line from here on out. As the price draws closer to $18,000 then the bottom line shows a quantum leap.

Interest expenses are reduced in the first instance by the debt restructuring reducing debt in absolute amount but in the second instance by the lower interest rates and lower quarterly requirements. The cash sweep from the free cash flow is heightened though. If anything, this will accelerate debt reduction further.

We are using $18,700 for our Tin price calculations for 2021, but realistically expect it to top $19,000 then in 2022 we see the price consistently above $19,000.

Factoring in the recently announced Fine Tin project gives an extra volume kicker in the latter half of FY21 and all of FY22.

This produces results for Alphamin shareholders (after minorities) of US$42.71mn in FY21 and nearly $55mn in FY22. Cash generation benefits from low sustaining capex of US$4mn per year vs US$25mn per year depreciation, and a tax shield until development costs have been recouped.

**Delayed Satisfaction**

Those in the tin space have been waiting a long while for the realization of dreams that a sizeable tin supply-demand gap would open up. The shift from Lead-based solders to tin-based solders was supposed to be the catalyst for the demand side uplift while the well-documented decline in the amount and grade of production was supposed to provide the supply-side decline.

**Tin & the China Factor**

The Tin price took a beating in the initial phases of the Coronavirus crisis. While many China-related metals actually saw price rises, Tin was beaten down as if with a mallet.

It's interesting to look at what happened in China, both the largest user and the largest processor. The outbreak of the Coronavirus resulted in the Chinese government quarantining the country, halting the majority of domestic refined tin production. Only government-owned smelters, including Yunnan Tin, operated during the lockdown. Output was, however, much lower.

Curiously, the price tanked, during the lockdown, despite China importing over 1,500 tonnes of refined tin. This was an increase of over 800% YoY and a continuation of the high imports seen in December 2019, the highest since early 2017. Exports of refined tin were reduced; China shipped out just 520 tonnes, down 69% YoY.

Imports of concentrates also fell during the period of lower smelter activity. According to the latest

customs data, China imported 24,678 tonnes of tin ore and concentrates in January and February. The estimated tin content was down 22% YoY to 7,000 tonnes, with 89% of the material mined in neighbouring Myanmar. The ITA claimed that, according to sources in the country, the increased imports were due to a large import arbitrage between the LME and SHFE tin prices.

A key swing factor in the tin equation is Myanmar. The country is regarded as some sort of colonial treasure chest by the Chinese who send hordes of *gastarbeiter* across the border to rip out Myanmar's resources. According to the International Tin Association workers returning to Burma from China are subject to a 14-day quarantine period, while the recent collapse in tin prices has seen some miners stop mining activity. Shipments from Burma were pre-holiday (Chinese New Year) stocks. However with China now restricting (re)entrants into China, this begs the question as to whether the Chinese workers will be willing to go to Burma if they may not be allowed back into China.

On the surface, according to the ITA, the picture in China appears to be heading back to normality. Smelters and downstream companies began ramping up to full production once again from May. While the short-term supply of refined tin is stable, medium-term supply is constricted by the constrained flow of concentrates. This is unlikely to concern those further down the tin supply chain, however. Demand will likely remain low as companies remain closed. The ITA in May predicted that the market balance in China was likely to shift to oversupply in the short-term and this turned out to be the case. However, prices started to rebound as Western users swung back into production and thus into competition with the Chinese tin users.

**Production Numbers & Reserves**

According to USGS

| | 2017 | 2018 | Reserves |
|---|---|---|---|
| Australia | 7,200 | 7,000 | 370,000 |
| Bolivia | 18,500 | 18,000 | 400,000 |
| Brazil | 18,000 | 18,000 | 700,000 |
| Burma | 47,000 | 45,000 | 110,000 |
| China | 93,000 | 90,000 | 1,100,000 |
| DRC | 9,500 | 9,000 | 150,000 |
| Indonesia | 83,000 | 83,000 | 800,000 |
| Malaysia | 3,810 | 4,000 | 250,000 |
| Nigeria | 5,960 | 6,000 | N/A |
| Peru | 17,800 | 18,000 | 110,000 |
| Russia | 1,300 | 1,300 | 350,000 |
| Rwanda | 2,860 | 2,900 | N/A |
| Thailand | 100 | 100 | 170,000 |
| Vietnam | 4,560 | 5,000 | 11,000 |
| Other | 200 | 300 | 180,000 |
| World Total | 312,790 | 307,600 | 4,701,000 |

**Tin – Risers and Fallers**

Mining of the metal is synonymous with Cornwall in the UK, as well as Bolivia, while more recently Indonesia and Malaysia have been the go-to locations for mining the metal while Spain, Australia, Rwanda and others have been less heralded locations.

With the price in the doldrums for decades, only the most economic

producers survived, and this tended to be the miners with deposits that could be exploited by dredging or with the comparative advantage of really cheap labour. The resurgence in output from non-South East Asian countries has been due to dropping production from alluvial producers in Malaysia and Indonesia. Despite long term underinvestment and a generalized disinterest amongst mining groups in the metal a small coterie of players have got to production or are very advanced, including Alphamin and AfriTin.

The landscape is essentially one of declining production in Indonesia and Malaysia (and reputedly Peru) and export complications in Indonesia as they grapple with maintaining value-added as they are in a phase of declining production.

**Tin & its Outlook**

That leaves us with supply considerations. The best thing that can be said is that the situation was tight even pre-Indonesian measures. Indonesia was not out of the market on a permanent basis but its actions resulted in some behavior modification of the existing players.

Meanwhile usage should return to an uptrend with global economic growth and grades continue to decline. New (or revived) production will only provide enough output to meet annual needs for a couple of years out. New mines will be needed and capital markets (or traders) will have to fund the explorers/developers. This makes for a promising scenario for upcoming tin players.

Over the coming years, Fitch Solutions forecasts global tin mine production growth to slow considerably as stringent environmental regulations and a relatively thin project pipeline weigh on global output.

The firm expects modest output growth in Indonesia, capped by regulatory uncertainty.

Myanmar is, however, expected to maintain its status as a top ten tin producer over Fitch's forecast period to 2029, although growth will be weighted to the 2024 to 2029 period.

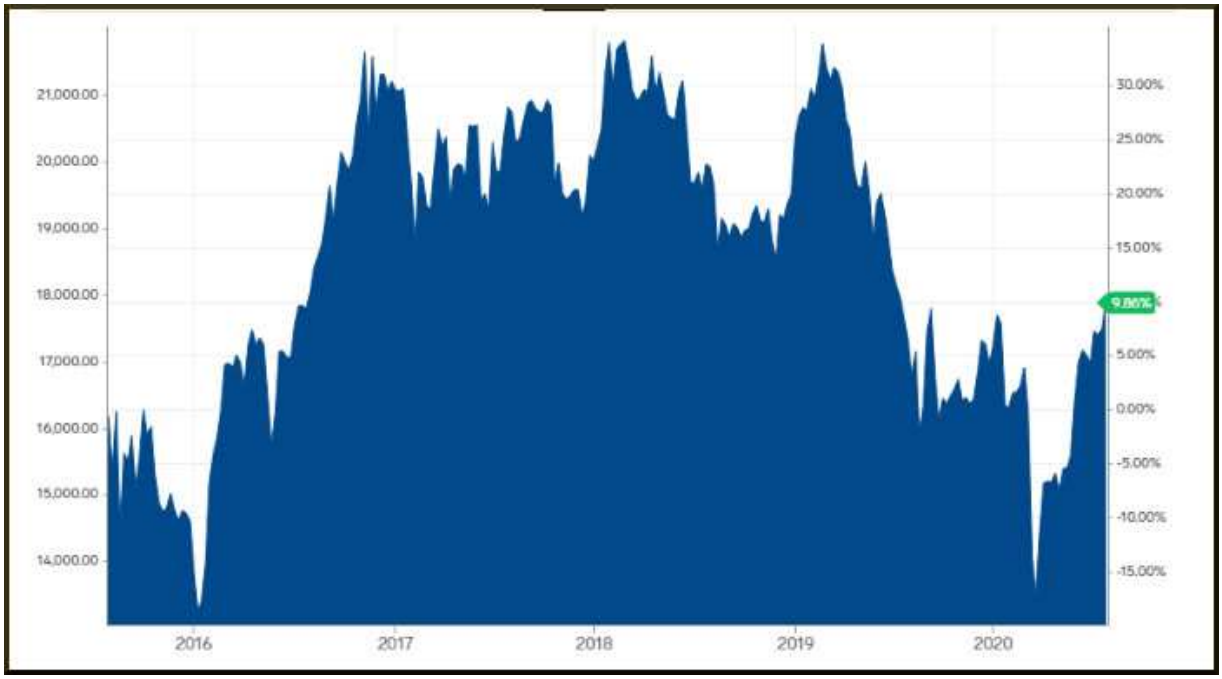
Fitch explains that details about tin mining projects and expansion plans in countries such as Myanmar, Indonesia and China are not regularly reported compared with other counties, which could cause its forecast to be overly optimistic as it weights its growth rates more closely to price increases.

The management at Alphamin have gone on record with a view that a tin supply "cliff" is evolving as a result of major tin producers experiencing grade deterioration, greater mine depths, ore reserve depletion and profitability challenges.

Even if the supply from Myanmar, which has been unpredictable, remains at 40 000 tpa.

**Price Outlook**

Despite the last decade showing a potential emerging supply crisis for tin, the price has gone sideways, or down, in the last few years. The chart below shows the last five years and it looks anything but a smooth ride.




*Source:Businessinsider.com*

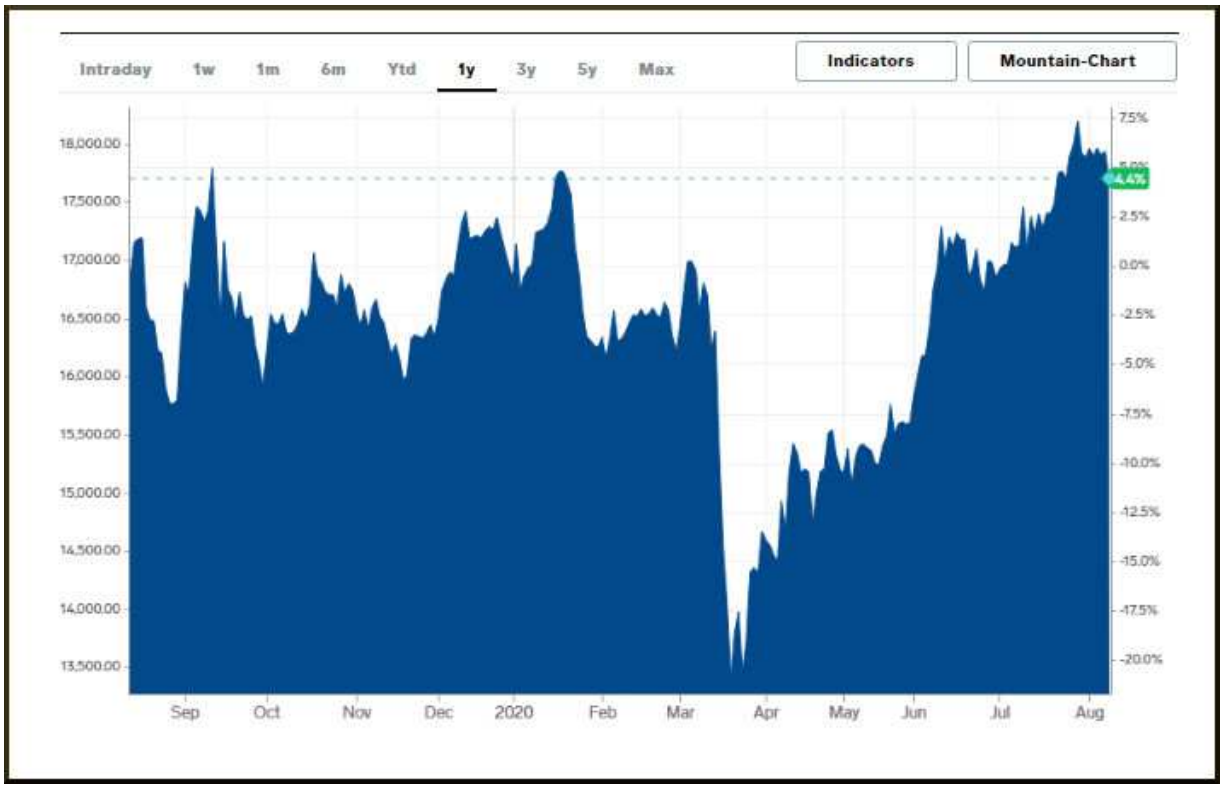
After peaking at $32,500 per tonne in 2011, the price sagged again but then spent the period between 2016 and 2019 locked in a range between US$21,000 & US$23,000. While investors love upward movement most tin users and miners would prefer the type of range-bound movement seen in the mid-decade than *boom & bust* scenarios.

However as one of the smallest of all metal markets on the LME, one might speculate that traders have found an attractive niche to trade within in a market they can move on very little volumes.

It is the fate of strategists to have to make calls on metal prices that almost inevitably are proven wrong over the medium term. The chances of being wrong are narrowed over the short term when momentum is going one's way and improved further when dynamics of supply (rather than demand) are fairly clear cut.

The table below shows the metal has largely recouped the worst of the Virus Crisis slump effect. More recent times have seen it trading between $19,000 and $21,000 and the Virus-induced crisis in the

markets pushed the price as low as $14,000 from which it is making a slow, but steady, recovery.




*Source: Businessinsider.com*

**Our Take on Tin**

The issue is whether supply is the prime driver, or is it demand, going forward? Much depends on the way the fallout from the virus crisis plays outs and is handled.

We are using $18,700 for our Tin price calculations for 2021, but realistically expect it to top $19,000 then in 2022 we see the price consistently above $19,000.

The market has tightened significantly of late and if this goes on then these estimates could be blown out of the water and the price could top $20,000 which, to put it in perspective, only takes it back to where it was averaging in recent years.

**Investor Access to Tin**

Good prices for four years in the middle of the decade did nothing to tease out real production additions (excepting Alphamin and AfriTin).

## The Tin Universe

| | Ticker | Market Cap | Project | Country | Notes |
|---|---|---|---|---|---|
| **Producer** | | | | | |
| Alphamin Resources | AFM.v | CAD$224.4mn | Bisie Mine | DRC | Exceptionally high-grade |
| **Producer Joint Venture** | | | | | |
| Metals X | MLX.ax | AUD$75.3mn | Renison Mine | Australia | 50% owned by Yunnan Tin in Tasmania, high-grade |
| **Developers** | | | | | |
| Aus Tin Mining | ANW.ax | AUD$2.99mn | Taronga | Australia | Also with copper and silver in resource |
| Avalon Advanced Materials | AVL.to | CAD$25.7mn | East Kemptville | Canada | Very low-grade, ex-BHP |
| Elementos | ELT.ax | AUD$17.84mn | Cleveland | Australia | Tin-Copper project in Tasmania, second project in Spain |
| | | | Oropesa | Spain | Nearly 51k tonnes Sn 0.55%, with PEA published in May 2020 |
| Kasbah Resources | KAS.ax | AUD$0.947mn | Achmmach | Morocco | Has been thru Sojitz, Traxys and Toyota Tsusho as strategic partners |
| Cornish Metals | CUSN.v | CAD$13.38mn | South Crofty | England | Reviving this famed tin mine in Cornwall |
| JSC Tin One Mining | Unquoted | | Syrymbet | Kazakhstan | Part of Lancaster Group |
| AfriTin Mining | ATM.LN | GBP14.7mn | Uis | Namibia | Secondray project is Mokopane in South Africa |
| Anglo Saxony Mining | Unquoted | | Tellerhäuser | Germany | 17.2% owned by Panthera (PAT.LN) |

As far as investable stories are concerned Alphamin stands out as the most accessible vehicle. There is also the indirect access afforded by MetalsX (but this story has significant "hair on it"). China remains off-limits and in some way autarkic, Bolivia is similarly off-limits (at least in investors' perceptions) while a few companies are trying to revive production in Australia and investigate the possibilities in places as untried as Morocco. Interestingly Africa, most notably Rwanda and Namibia, are having a tin renaissance and Brazil is on the rise (impelled forward by the Peruvian tin major, Minsur).

The table on the next page shows a representative sample of the producers accessible to investors, some developers and some that represent little more than a twinkle in the eye.

Most of the listed companies are production wannabes even by the most charitable description. Most, with the best will in the world, will be producing as much in a year as Indonesia produces in a month. And most of the putative producers will not be functional for years after they make a production decision, and now is not a propitious moment to be funding a new venture (though potentially very rewarding for the far-sighted).

**The Post-Virus World**

The repercussions of the virus have rippled through the industrialised nations with a broad swathe of commentators and potentates reading into the crisis a need for supply chains that do not involve China. The longer term critics of Chinese dominance in many metals sub-spaces have been emboldened and now empowered to push back against those who have long ruled the roost with a mantra of "*Cheap Uber Alles*".

Various countries have published critical metals lists and these are now becoming viewed almost like "to do" lists in liberating supply from the Chinese grasp.

In May 2018, the U.S. Department of the Interior, in coordination with other executive branch agencies, published a list of 35 critical minerals (83 FR 23295), including tin. This list was developed to serve as an initial focus, pursuant to Executive Order 13817, ''A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals".

However, publishing lists does not liberate supply chains from China dominance. While a large proportion of mine production is outside China, the bulk of the processing capacity is within China. Replicating that in "safe" jurisdictions is probably more important at this time than fussing about adding more mines in non-Chinese locales. That will happen anyway as we can see with Alphamin and a few smaller additions to mining capacity.

Again it comes back to Western governments and major end-users putting their money where their mouth is and funding smelter capacity, and then securing offtakes, which makes a healthier ecosystem

to avoid driving new producers into the ever-open arms of the Chinese refiners.

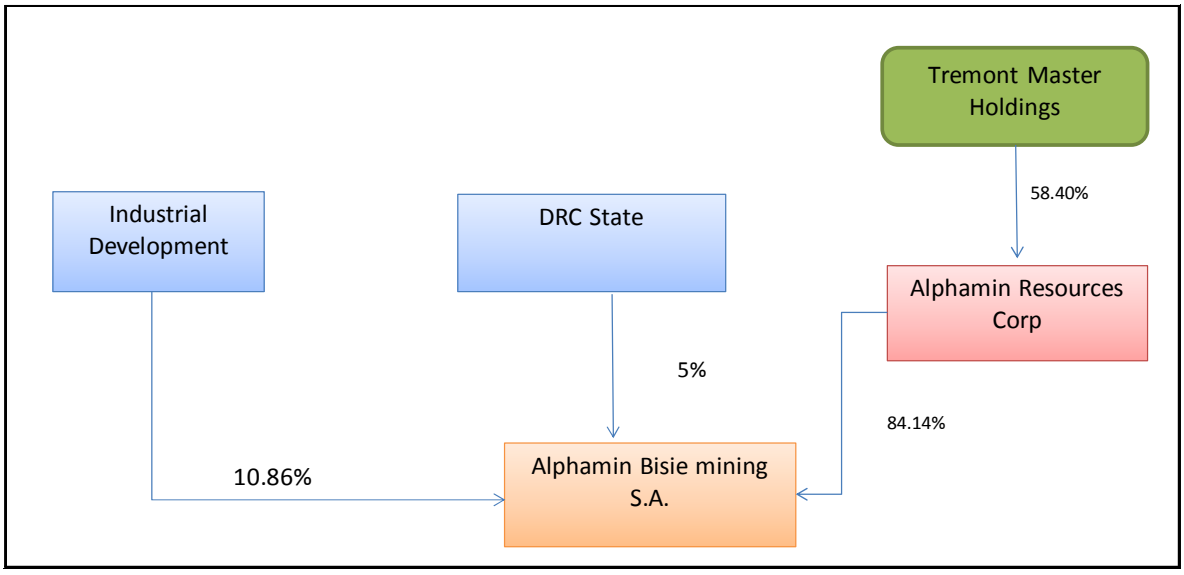
**Tremont – The Major Shareholder**

The key to any project in this day and age though is financing and Alphamin managed a coup in the form of a very sizeable capital injection in 2013 from Tremont Master Holdings, the African investment platform, based in Grand Baie, Mauritius for Denham Capital, an $8.4-billion US-based resource fund.

In early December 2013, Tremont became the company's largest shareholder via a private placement of 100,000,000 common shares at an original price of $0.12 per share. However, this was raised at the closing of the deal to $0.135 per share, in a very intriguing development. The sole investor was Tremont Master Holdings that, upon closing of the placement, ended up with approximately 39.81% of the shares of the company on an undiluted basis.

Prior to the recent offering, which included a debt-for-equity swap (to be discussed further along), Tremont directly owned 420,881,510 common shares and warrants exercisable to acquire a further 100,350,245 common shares.

Ownership of the Alphamin is at two levels. The DRC company Alphamin Bisie Mining owns the mining title; the DRC government has 5% as a free carry; the South African State-owned Industrial Development Corporation had until recently 14.25%; and Alphamin holds the balance of the shares.




Malaysia Smelting Corporation initially held a stake of 5% but this has been whittled down through financings in recent years in which it did not wish to participate.

Tremont have indicated that the acquisition of the shares is being made for investment purposes.

In another recent announcement, in late July, as a result of the equity offering concluded in May 2020, Alphamin settled certain third-party indebtedness of indirect subsidiary Alphamin Bisie Mining SA (ABM), the owner of the Bisie tin mine, by the issue of Alphamin shares in consideration for a temporary loan due by ABM. Alphamin has now secured the required approvals from ABM to convert this ABM loan into new shares of ABM. This increases Alphamin's equity ownership of the tin mine from 80.75% to 84.14%.

**Financing**

In mid-May 2020 the company announced that it had placed 312,319,539 common shares for proceeds of approximately US$31.01mn.

In one tranche the company issued for cash on a non-brokered private placement basis 100,819,541 common shares at a price of CAD$0.14 for gross proceeds of approximately CAD$14,114,736 (approximately US$10.01mn). Of this amount, 60,428,571 common shares (approximately US$6mn) were acquired by Tremont Master Holdings, while directors & officers of Alphamin (and their associates and affiliates) acquired a further 4,673,755 common shares.

In another tranche, concurrently, in a shares-for-debt transaction of CAD$29.61mn (approximately US$21mn) that resulted in the issuance of 211,499,998 additional common shares at a deemed price of C$0.14 per share. Of this amount, 191,357,143 common shares were issued to Tremont for the assignment and transfer by Tremont to Alphamin of US$19mn of the amount owning to Tremont under the senior secured credit facility made to Alphamin's 80.75% subsidiary, Alphamin Bisie Mining S.A. A further 20,142,856 common shares were issued to arm's length third-party creditors of AFM under similar debt settlements.

As a result of these transactions Tremont acquired direct ownership of a further 251,785,714 common shares. As a result, it now owns 672,667,224 common shares, representing approximately 57.09% of the number of the outstanding common shares. They also hold warrants to acquire up to a further 100,350,245 common shares of Alphamin. Assuming the exercise of all warrants by Tremont only and no other exercises, Tremont would own up to approximately 60.45% of the number of common shares of the company on a partially diluted basis.

**Debt Picture**

If one was to view Alphamin as a junior explorer (as it long was) then the current debt levels at the company might be of concern, However, the realization that the company has transitioned to commercial production over nine months ago seems to have escaped the marketplace which has taken its eyes off the story. The current debt levels amount to around 1/3$^{rd}$ of expected revenues for FY20.

On the following page can be seen the evolution of the company's debt in recent years.

| Cash balance due on debt | Related Party US$ | Non-Related Party US$ | Total US$ |
|---|---|---|---|
| Balance, December 31, 2017 | 3,150,071 | 6,920,731 | 10,070,802 |
| Drawdowns | 21,875,000 | 48,125,000 | 70,000,000 |
| Interest accrued | 1,734,124 | 3,591,174 | 5,325,298 |
| Balance, December 31, 2018 | 26,759,195 | 58,636,905 | 85,396,100 |
| Interest charged | 4,788,104 | 10,492,079 | 15,280,183 |
| Interest payments made | - 827,406 | - 1,813,078 | - 2,640,484 |
| Balance, December 31, 2019 | 30,719,893 | 67,315,906 | 98,035,799 |
| Capital repayment | - 19,000,000 | - 12,200,000 | - 31,200,000 |
| Interest charged | 1,860,027 | 4,714,468 | 6,574,495 |
| Interest repaid | - 1,608,833 | - 3,866,278 | - 5,475,111 |
| **Balance, June 30, 2020** | **11,971,087** | **55,964,096** | **67,935,183** |

The most recent restructuring in May 2020 produced a quantum reduction in the company's debt. The amendments were designed to reduce debt service costs, reduce mandatory debt repayments and provide more favourable financial covenants. The financing resulted in the prepayment of US$31.2mn in principal under the Credit Facility, with US$19mn settled under the shares for debt transaction with Tremont and a further US$12.2mn prepaid from the net proceeds of the private placement and existing cash resources.

REVISED DEBT TERMS

| | Current Key Terms | Revised Key Terms |
|---|---|---|
| **Interest rate** | Libor +14% | Libor +10.5% |
| **Interest Payments** | US$1.3mn per month against capital repayments | $300k per month to Dec 2020. An average of $450K per month during 2021 and reducing from 2022 against capital repayments |
| **Debt Capital repayments** | US$2.7mn per month from July 2020 to June 2023 | $850k per month from July 2020 to Dec 2020, $2.1mn per month from January 2021 to June 2023 |
| **Debt Service Cover Ratio** | 1.75X | 1.5X (waiver to 30/6/21) |
| **Penalty of prepayment** | 3% in cash | 1.7% in cash |
| **Mandatory Cash sweep** | 30% of excess cashflow | 50% of excess cashflow |

As partial consideration for the amendments to the Credit Facility, Alphamin issued to two arms-length lenders, Sprott Private Resource Lending (Collector), L.P. and Barak Fund SPC Limited, an aggregate of 2,014,284 common shares at a deemed price of CAD$0.14 per share.

Over and beyond the debt reduction (which inevitably lowers the interest cost) it is the terms of the remaining debt that is worth focusing upon because the changes there signal meaningful reduction in servicing costs and particularly an amelioration in FY20 as the mine ramps up.

The implications of the above changes are interesting to ponder. Firstly interest payments in the short term shall be very much reduced. The full cost of interest will be accounted but the cash payments will be reduced to a mere $300k per month, as per the table above.

The debt capital repayments per month have been reduced also by 70%. All of this increases cashflow but we would note that the cash sweep will then kick in. The definition of "excess cashflow" is not given.

The interest costs are 11.5% on US$67mn debt =US$ 7.7mn per annum plus US$1.5mn on concession interest and leases = ~US$9mn per year = US$2.3mn per quarter. This will reduce as Alphamin meets debt repayments, particularly via the free cash sweep.

All in all, though this is a massively reduced burden upon the company.

**Warrants**

On April 8, 2019 the company issued 79,800,000 warrants in the private placement.

As this latest group of warrants were issued as part of a private placement, rather than a rights issue, the warrants need to be accounted for as a financial liability with fair value through profit and loss. The warrants were valued on the date of issue and the related fair value of $4,297,595 was raised as a liability (the balance of the cash received in the respective private placements was accounted for in equity as Capital Stock).

The warrants are valued using the Black-Scholes pricing model with the assumptions below:

| | April 8, 2019 | January 22, 2018 | December 15, 2017 | July 19, 2017 |
|---|---|---|---|---|
| Strike price | CAD$0.30 | CAD$0.40 | CAD$0.40 | CAD$0.4375 |
| Risk free interest rate | 1.593% | 1.24% | 1.24% | 1.24% |
| Expected life of options in years | 3.00 | 3.00 | 3.00 | 3.00 |
| Annualised volatility | 70% | 70% | 70% | 70% |
| Dividend rate | 0.00% | 0.00% | 0.00% | 0.00% |

All warrants in issue were revalued on June 30, 2019 using the same valuation methodology as described above and, on that date, the fair value of the warrants in issue was calculated at $9,726,227. The movement in the warrant liability was credited to the statement of loss and comprehensive loss (six

months ended June 30, 2019: Credit of $282,587) (Six months ended June 30, 2018: Credit of $2,531,962).

With the company's stock price where it currently is, a large number of the warrants on issue will be extinguished in 2020 without being exercised. This implies that the "gains" on the expiring warrants recorded thus far will be "baked in". This really leaves only the January 2018 and April 2019 series of warrants in contention.

**Shareholdings**

In line with the DRC mining code, the subsidiary Alphamin Bisie Mining SA (ABM) granted 5% of its share capital to the government of the DRC during the 2015 financial year. To facilitate this, ABM divided their share capital into two classes, "A" shares and "B" shares. The "B" shares are intended to be held solely by the Government of the DRC and are non-dilutable at 5% of total share capital ("A" plus "B") in issue. "B" class shares have normal voting rights on a pro rata basis and the DRC Government has a right to appoint one director to the ABM board. The 5% is a free carry under the terms of the DRC mining code, hence the DRC Government is not required to contribute on granting of their initial holding or further issues to maintain their stake at 5%.

In November 2015, Alphamin entered into an agreement with the Industrial Development Corporation of South Africa (IDC) pursuant to which the IDC could invest up to $10mn directly into ABM, in three tranches, subject to the completion of certain milestones.

By the end of the 2016 financial year-end Alphamin had received all tranches, resulting in an ownership in ABM of 14.25% by the IDC. Under the terms of the shareholders' agreement the IDC were granted an "offtake option". Under the offtake option the IDC is entitled, as long as it owns 11% or more of ABM's "A" class shares, to an option to purchase from ABM a portion its mineral production. The percentage of production that the IDC wishes to acquire, cannot exceed their percentage holding in the "A" class shares of ABM at the date of exercise.

The IDC shall only be able to benefit from the "offtake option" if the relevant percentage of the mine's production is not already committed to other buyers in respect to the relevant period. The offtake acquired can only be for a minimum of six months and a maximum of twelve months and must be purchased at the same average price and other terms as ABM is able to, and would otherwise intend to, sell its product to other third-party purchasers. The "offtake option" is not transferrable. The IDC waived this right to allow ABM to enter into an arm's-length offtake agreement with the Gerald Metals group in Q1 2018.

**ESG – The Peace Dividend**

Merely by its economic activity Alphamin is giving the local population what they need, which is peace and some outside income flow. It is bringing stability and economic activity to the recently troubled North Kivu, adding significant benefit to the community.

The Walikale territory was at the heart of the wars on the Eastern side of the DRC from 2004 until recent years. Consequently, formal economic activity ceased to exist, and the informal economy was severely constrained. From the outset Alphamin took measures to broaden out its positive economic impact to as many of the affected communities as possible. To achieve this Alphamin deployed labour intensive construction activities such as establishing the first pass of the 40km access road through virgin jungle entirely by hand. Regional roads were similarly repaired using primarily labour intensive means.

Mining is a good source of trickle-down economic activity. It requires functioning infrastructure, communications, and inputs across a broad range of goods, many of which can be procured from local producers. Through the Lowa Alliance (a community initiative), Alphamin actively seeks out sustainable economic enterprises to support.

After the establishment of the Lowa Alliance, joint surveys with the affected communities and Lowa Alliance liaison officers were undertaken to identify and prioritize the various initiatives required by the different communities. These initiatives are being implemented according to an established program. They include the construction of schools, training facilities, potable water reticulation, enterprises of different descriptions and sports facilities. Gerald, Alphamin's offtaker, also contributes to the Lowa projects, such as the Logu Potable Water Project.

A highly tangible example are the farmers in the area supplying fresh produce to the ABM kitchens, and local Cocoa growers supplying a Goma chocolatier.

Economic activity along Alphamin's primary logistics line has improved dramatically due to this route now being passable. Similarly, where Alphamin has had cell phone towers installed, local entrepreneurs have mushroomed around these offering all manner of services within the connectivity umbrella of these towers.

Other consequential benefits to the Walikale territory include emergency access to the territory by way of Alphamin's regular flights.

The mine has an IFC-compliant ESHIA in place. The environmental impact of the mine has been constrained by going with an underground mine, eliminating the need for an open pit and associated spoil dumps.

Fauna has been seen to be recovering after significant pressure from the artisanal miners and their associated activities which decimated local fauna.

Local staff are trained and recruited where possible with a number of former artisanal miners forming part of the Alphamin workforce.

**Risks**

The prime risks we can envision at this stage are:

- A return to weak Tin prices
- Tricky logistic routes to markets
- Political unrest/guerilla activities in the region
- Fluctuating perceptions of Tin as a "conflict mineral"

Tin is subject to the forces of supply and demand as are most metals. The current price rise has occurred from a heavily oversold position. New production is severely limited. However, Tin is inextricably linked with industrial activity and the West (at least) is in an economic swoon in the wake of the Virus Crisis. Most of the damage appears to have been to the service sector thus far. However it cannot be discounted that industrial demand might decline and limit the upside for Tin in the short (or even medium-term).

The bridge issue in late 2019 showed the vulnerability of Bisie to its limited options in accessing ports. This problem will only go away with the construction of better infrastructure in-country. While not its responsibility *per se,* the company paid to repair the bridge in question when it was damaged. The company would prefer not to take on such general benefit projects but to guarantee future surety of egress and ingress it will be helping maintain roads and bridges that it needs to traverse to markets. In the medium term the roads may become subject to tolls which would then provide an operator to keep them in good stead (though with attendant cost in tolls payable).

The guerilla situation in the vicinity of the Bisie mine has declined sharply from the tumultuous days in the middle of the decade. This is not to say that it won't deteriorate again but as living standards are rising around the mine for its workers, their extended family and beneficiaries of the trickle-down effect the chances of locals being involved in attacks against the mine are lessened.

Bisie's past has been one of the reasons why tin was included in the Dodd-Frank legislation, which was introduced by the US to stop DRC warlords from using metals to finance their conflicts.

The legislation created a necessity for Alphamin to demonstrate to the likes of Apple, Microsoft and Samsung that its tin is 100% conflict-free. This the company has successfully done. Likewise, though it has propelled the artisanal miners to clean up their act (literally and metaphorically) to move their output into the daylight of "non-conflict material". Somewhat of a virtuous circle has been created that may eventually liberate mines in this part of the DC from the strictures. In many ways though the requirement to prove the provenance of metal from the DRC gives Alphamin an advantage because it is so easy to prove its product qualifies, with the opportunity to drive rogue players off the field.

**Conclusion**

Tin has not exactly been sexy since the go-go days before the collapse of the Tin cartel. However not being a "promotable" metal for such a long time means that tin consumers have rested upon their

laurels and imagined that providence would provide them with on-going supplies at attractive prices for their margin expectations. As long as low-cost, low tech alluvial production out of Malaysia and Indonesia could act as a price suppressant the end-users were happy and moreover unconcerned. However, such a scenario meant that there was minimal investment in new production and the pool of wannabes became very shallow indeed. The current flush of developers is the result of prices holding firm between $19-22,000 per tonne for several years (until recently). The developments would have been less likely to have moved forward if prices had averaged around the current levels of the tin price.

The supply dynamic is the prime motor of the space. Future demand was incorrectly estimated by parties such as the Tin Association and the USGS at the beginning of the decade. This created false expectations. The decline in traditional sources and their non-replacement is tangible though. While it might not feel like it, now is a good time to be bringing on new projects.

This debt-equity swap which puts Alphamin in a position where its balance sheet looks healthier than it has done in several years particularly as it is now cash-flowing. It also produces tin within the lower quarter of the global cost curve which makes it sustainable from that perspective. EBITDA margins are over 35% at current low tin prices and any uptick in price should have a snowball effect on earnings and thus the valuation afforded by the markets.

Alphamin is quite clearly a serious contender and the grades imply that it will be much more viable at lower prices (not that we foresee those) than almost all other projects. The DRC does not spook us but its tendency to favour on-shoring (at least in copper/cobalt concentrates) raises the possibility of a potential wrinkle in export strategy.

We expect that as positive results start to mount investor attention will start to refocus on Alphamin, particularly as it will become evident that it is the largest accessible, listed, non-Chinese play on the Tin recovery. With EPS of over US 4cts per share forecast for FY21, it does not take much imagination to foresee an eventual rerating as this puts the stock on a P/E ratio of only 4.8 times FY21 earnings.

We have afforded Alphamin a **LONG** rating with a 12-month target price of CAD$0.48.


CA:AFM Daily
8/10/20
0.35
0.30
0.25
0.20
0.15
0.10
Volume
©BigCharts.com
15
10
5
0
Millions
Sep
Oct
Nov
Dec
20
Feb
Mar
Apr
May
Jun
Jul
Aug

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